USER GUIDE

CFX-750™ Display

Version 1.9
Revision A
September 2011

Trimble

Agriculture Business Area

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Responsible Party:

Trimble Navigation

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Sunnyvale CA 94085

Telephone: 1-408 481 8000

Canada

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This apparatus complies with Canadian RSS-GEN, RSS-310, RSS-210, and RSS-119.

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5521 DZ Eersel, NL

Safety

Always follow the instructions that accompany a Warning or Caution. The information they provide is intended to minimize the risk of personal injury and/or damage to property. In particular, observe safety instructions that are presented in the following format:

WARNING – This alert warns of a potential hazard which, if not avoided, can cause severe injury.

CAUTION – This alert warns of a hazard or unsafe practice which, if not avoided, can cause injury or damage.

***Note** – An absence of specific alerts does not mean that there are no safety risks involved.*

Warnings

WARNING – Anhydrous ammonia (NH3) can cause severe burning, blindness, or death. Before you begin to operate or service equipment that contains NH3, carefully read and follow all safety instructions in Working with anhydrous ammonia, page 6.

WARNING – Incorrect adjustment of the Manual Override Sensitivity calibration setting could cause this critical safety feature to fail, resulting in personal injury or damage to the vehicle. Any adjustment to this setting should only be made by an experienced user.

WARNING – During the Deadzone calibration, the system moves the vehicle's steering wheels. To avoid injury, be prepared for sudden vehicle movement.

WARNING – When you tap the liquid flow calibration **Start** button, the machine will become operational. Take all necessary precautions to ensure user safety. Failure to do so may result in serious injury or death.

WARNING – When you tap the control valve calibration **Start** button, the machine will become operational. Take all necessary precautions to ensure user safety. Failure to do so may result in serious injury or death.

WARNING – When you tap the fill disk **Start** button, the machine will become operational. Take all necessary precautions to ensure user safety. Failure to do so may result in serious injury or death.

WARNING – When the implement is down and the master switch is in the On position, the machine is fully operational. Take all necessary precautions to ensure user safety. Failure to do so could result in injury or death.

WARNING – The display contains a single-use Lithium-sulfide LiSO2 battery. Do not expose the battery to temperatures greater than 71 °C (160 °F) as the battery may explode.

WARNING – MOVING PARTS DURING THIS TEST! Please stay clear of the implement. Ensure the implement is raised, the transmission is in PARK and the emergency brake is applied before continuing.

Working with anhydrous ammonia

- Contact your NH3 supplier to review all safety requirements associated with anhydrous ammonia (NH3).
- Always wear correct personal protective equipment. This includes, but is not limited to:
  - Goggles or face shield
  - Protective suit and gloves
  - Respirator
- ***Do not*** allow anyone to operate the system without proper instruction and training.
- Stand up-wind when working around NH3 and related equipment.
- Always keep NH3 equipment away from buildings, livestock, and other people.
- Never work on NH3 equipment in confined spaces.
- Before you attempt to transport the implement, discharge the system of all NH3 and completely shut down the system. See Discharging the system, page 7.
- If symptoms of illness occur during or shortly after use of NH3 products, seek immediate medical attention.
- Keep a source of clean water (at least five gallons) readily available. In case of exposure, flush exposed skin or eyes immediately with large quantities of water and seek immediate medical attention.
- NH3 can be harmful to the environment if not used correctly. Follow all local, state, and federal regulations regarding proper handling of this chemical.

Servicing the equipment

1. Remove the system from operation before performing any maintenance.
2. Thoroughly bleed all system lines and disconnect the nurse tank hose. See Discharging the system, page 7.
3. Make sure that the gauge pressure is at zero before you open the system.
4. Use extreme caution when opening a previously pressurized system.

Discharging the system

1. Turn off the console or vehicle master switch.
2. Completely close the main shut-off valve on the supply or nurse tank.
3. Resume field application until the pressure gauge shows zero pressure.
4. Check again that the console and/or vehicle master switch, and all section switches, are turned off.
5. Completely close the emergency shut-off valve the cooling tower.
6. Bleed and disconnect the nurse tank supply hose from the system.
7. Turn on the console master switch and all section switches.
8. Stand up-wind from the implement and then slowly open the bleed valve(s) until fully open.
9. Allow at least one (1) hour for the system to fully discharge.
10. Before you open the system, make sure that the pressure gauge on the manifold reads zero and that the cooling tower is not cold to the touch. This ensures that all liquid NH3 has evaporated and that the pressure is discharged.

Note – *Frost on any component is a positive indication of trapped NH3 at low pressure. Lack of frost does not always indicate a lack of NH3.*

Contents

Safety 5

Warnings 5
Working with anhydrous ammonia 6
Servicing the equipment 7

1 Introduction 15

About the product 15
Related information 15
Technical assistance 15

2 Installing the Display and Antenna 17

System components 18
Installing the display 18
Connecting the display 20
Standalone CFX-750 / WAAS / EGNOS / OmniSTAR XP/HP corrections 21
Standalone CFX-750 / RTK corrections 22
Installing the antenna 22

3 Getting Started 25

Display basics 26
Front view 26
Back view 27
Cleaning the touchscreen 28
Power up 28
Power down 29
Resetting the display 29
The USB socket 30
Removing a USB drive 31
Taking a screenshot 32
The Quick Start Wizard 32
Using the setup wizards 33
The guidance screen 34
Status 35
Settings 35
View 35
Extended icons 37
Quick Access icon 38
The Field icon 40
The Guidance icon 40
The Mapping icon 41
The Auto steer icon 41
Reading lightbar patterns 41
Using the EZ-Remote joystick 42

On-screen icons 43

4 Vehicle 47

Introduction 48
The EZ-Steer assisted steering system 49
Setup 49
Calibration 51
Operation 54
The EZ-Pilot assisted steering system 57
Setup 57
Calibration 59
Operation 62
The Autopilot automated steering system 65
Setup 65
Operation 65

5 Implement Application Controller 67

Introduction 68
Prescriptions 69
Field-IQ 70
Definitions 71
Units of measure 71
Installing the Field-IQ hardware 72
Setting up the Field-IQ system 72
Advanced 76
Operation 78
HARDI 5500 controller 81
Setup 81
Advanced 81
Operation 83
Raven controllers 84
Setup 84
Advanced 85
Operation 86
Rawson controller 87
Setup 87
Advanced 88
Operation 90
Amazone controller 91
Setup 91
Advanced 91
Operation 93
LH 5000 controller 93
Setup 93
Advanced 94
Operation 96

Vaderstad 97
Setup. 97
Advanced. 97
Single section boom switching 99
Bogballe controller 99
Setup. 99
Advanced. 100
Single section boom switching 101
Checking the implement connection 101

6 Mapping and Guidance 103

Introduction 104
Configuring the Guidance settings 104
Turn Settings 105
Coverage Settings. 105
Nudge Settings 106
Mapping 106
FreeForm Recording 107
Headland/Infill Switching 107
Boundary setup 107
Starting Guidance. 108
Implement Setup options. 108
Using guidance on curved segments. 109
Using guidance on straight segments 109
Creating straight sections on Headland or Curve swaths. 110
Fields. 110
Creating a new field 110
Selecting (loading) a field. 110
Adding an AB line to a current field 111
Selecting (loading) an AB line into a field. 111
Record keeping 111
Resetting guidance 112
Guidance lines. 112
Distance between guidance lines. 112
Headlands 112
On screen appearance. 113
Guidance Patterns 113
Straight AB. 114
A+ line. 114
Identical curve 115
Adaptive curve 115
Pivot 116
Headland 116
FreeForm 118
Coverage logging 120
The pause / resume function. 120

Curve smoothing 120

7 GPS. 121

Introduction 122
GPS Setup 122
Position Quality 122
Advanced 123
Antenna Type 123
Use SBAS satellites in the position fix 123
Force GPS Iono 124
OnPath Filter 124
Satellite Health 124
Status 124
GPS Status 124
Satellite Status 124
DGPS Status 125
Filter Status 125

8 Data 127

Introduction 128
DCM-300 modem 128
Passcodes 128
Configuring the display for VRS corrections 130
Configuring VRS settings 131
Connected Farm Setup 132
Initial setup 132
Device name 133
Modem only setup 133
Network registration 134
Connected Farm data transfer 134
Sending Field data using Connected Farm 135
Receiving Field data through the Connected Farm service 135
Manage Data 136
USB 136
Clearing the internal memory 137

9 System. 139

Introduction 140
Display 140
Units 140
Color Scheme 141
Time Zone 141
View 141
Status Popup Transparency 141
Backlight 142
Touchscreen speaker volume 142

Lightbar Setup. 142
Advanced 143
Save/Load Configurations 143
Digital Output. 143
Enable Advanced User Config. 144
NMEA Output. 144
EZ-Remote joystick. 144
EZ-Remote Keypad Assignment Wizard 145
EZ-Remote LED Brightness 145
EZ-Remote Keypad Assignments. 145
EZ-Remote operation 146
Unlock / Upgrade 147
Upgrading your display 147
Unlocking features 147
Status 147
CFX-750 screen 148
Recalibrate touchscreen. 148

CHAPTER

1

Introduction

This manual describes how to install, configure, and use the Trimble® CFX-750™ display, version 1.00.

Even if you have used other Global Positioning System (GPS) products before, Trimble recommends that you spend some time reading this manual to learn about the special features of this product. If you are not familiar with GPS, visit the Trimble website (www.trimble.com) for an interactive look at Trimble and GPS.

About the product

The Trimble CFX-750 is an in-cab touchscreen display that provides affordable guidance, steering and precision agriculture functionality.

The CFX-750 display includes a built-in GPS receiver that you can upgrade to receive GLONASS satellite signals. The display can also use an array of components to maximize efficiency when planting, spraying, spreading and strip tilling, including the Trimble® Field-IQ™ crop input control system.

Related information

Sources of related information include the following:

- Release notes – The release notes describe new features of the product, information not included in the manuals, and any changes to the manuals. The release notes are available at www.trimble.com.
- Trimble training courses – Consider a training course to help you use your GPS system to its fullest potential. For more information, go to the Trimble website at www.trimble.com/training.html.

Technical assistance

Contact your Trimble Reseller for technical assistance.

CHAPTER

2

Installing the Display and Antenna

In this chapter:

- System components
- Installing the display
- Connecting the display
- Installing the antenna

This chapter introduces the CFX-750 display and system components, and also describes how to install the display and antenna.

System components

Item	Description	Part number
❶	CFX-750 display	94110-00
❷	RAM mount and screws	61958
❸	Quick reference card	78838-00-ENG
❹	Compact disc	78821-02
❺	GPS antenna cable	50449
❻	Power bus/CAN cable	77282
❼	Power cable	67258-01
❽	AG25 Antenna	77038
❾	AG25 Antenna mount plate	62034

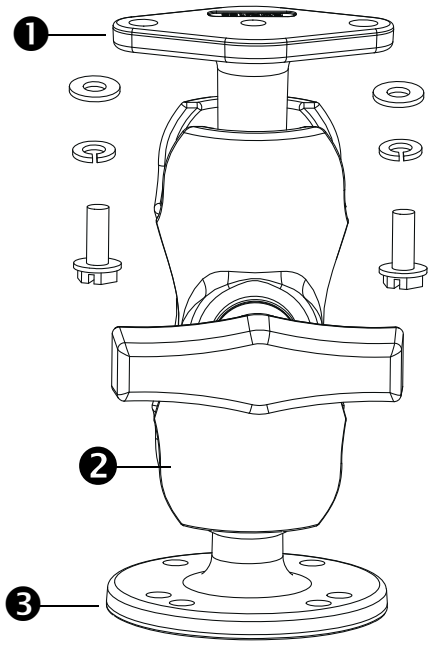
Installing the display

Mount the CFX-750 display in the vehicle cab. When you position the display, make sure that:

- it is within the driver's reach; the USB drive is easy to remove and replace.
- the touchscreen is easy to see but the display does not block the driver's view.
- it does not interfere with the driver getting in or out of the cab, or any other activities.

The image to the right shows the mounting assembly for the display:

Item	Description
❶	Diamond-shaped mounting plate
❷	RAM mount
❸	Bar mount



To install the display:

1. Use the supplied screws to firmly attach the diamond-shaped mounting plate to the back of the display:

2. Attach the RAM mount to the ball on the diamond-shaped mounting plate:

3. Select a position in the cab for the display. Hold the display in the selected location and check that it is easily accessible from the driver's seat.
4. Use the provided bolts to attach the bar mount to the cab.
5. Attach the other end of the RAM mount to the ball on the bar mount and then tighten the screw.

Connecting the display

The diagrams in this section show how to setup the CFX-750 display as a standalone system.

To learn how to connect the CFX-750 display to other the system components, see the *CFX-750 Cabling Guide*.

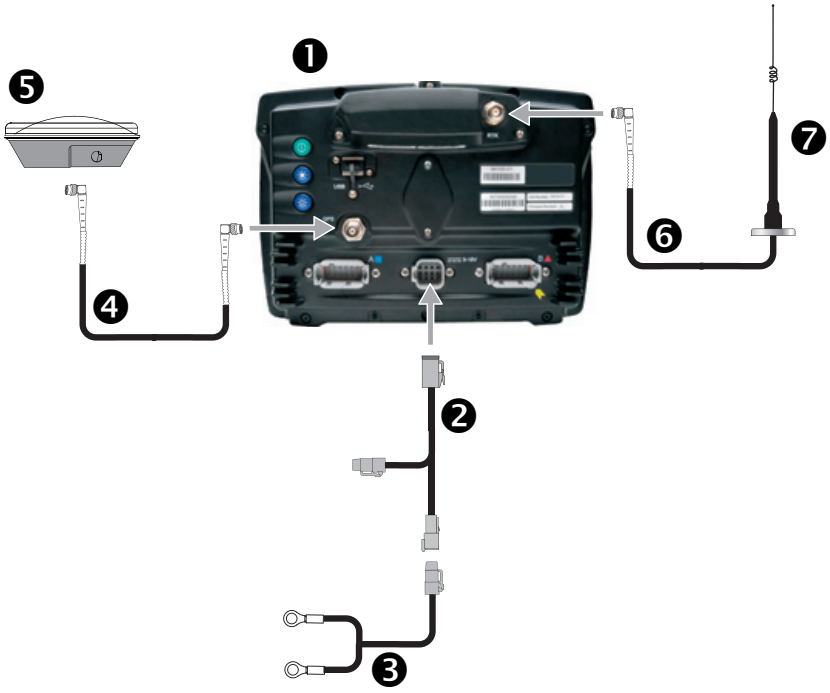
Standalone CFX-750 / WAAS / EGNOS / OmniSTAR XP/HP corrections

Connecting the CFX-750 display to use WAAS or XP/HP corrections:

Item	Description	Trimble part number
1	CFX-750 display	94110-00
2	CFX-750 power cable	77282
3	CFX-750 basic power cable	67258-01
4	8 m GPS TNC/TNC RT angle cable	50449
5	AG25 GNSS antenna	77038

Standalone CFX-750 / RTK corrections

Connecting a standalone CFX-750 display to use RTK corrections:



Item	Description	Trimble part number
1	CFX-750 display ***Note –*** *RTK password required.*	94110-00
2	CFX-750 power cable	77282
3	CFX-750 basic power cable	67258-01
4	8 m GPS TNC/TNC RT angle cable	50449
5	AG25 GNSS antenna	77038
6	NMO to TNC 20ft antenna cable and base	62120
7	900 MHz radio antenna kit	22882-10

Installing the antenna

Note – *To minimize any interference to the GPS signal, make sure that the GPS antenna is at least 1 m (3 ft) from any other antenna (including a radio antenna). You may experience interference if you operate the vehicle within 100 m (300 ft) of any power line, radar dish, or cell phone tower.*

Note – *The AG25 antenna has integrated magnets for easy installation. To attach the antenna to a non-metal surface, you must use the mounting plate.*

To install the AG25 antenna:

1. Find the mounting location for the antenna at the front of the vehicle roof, centered from left to right.
2. On the mounting plate, remove the protective covers from the adhesive strips.
3. Attach the mounting plate to the vehicle roof with the adhesive strips. Ensure that the mounting plate is centered along the vehicle roof.
4. Connect the antenna cable to the antenna.
5. Place the antenna directly on the mounting plate. The three magnets embedded in the bottom of the antenna will hold it in place.
6. Route the other end of the antenna cable into the cab.

CHAPTER

3

Getting Started

- Display basics
- The Quick Start Wizard
- Using the setup wizards
- The guidance screen
- Using the EZ-Remote joystick
- Reading lightbar patterns
- On-screen icons

This chapter describes, in general terms, how to use the CFX-750 display.

Display basics

The CFX-750 display provides guidance, steering and precision agriculture functionality. The display has a touchscreen that you use to operate your system, and view guidance information. In addition, there is a USB port on the display for loading and saving field data.

Front view

Item	Description	Notes
❶	8" Touch-sensitive screen	To interact with the system, tap the screen with your finger. For more information, see Recalibrate touchscreen, page 148.
❷	Speaker	You can adjust the speaker volume, or turn it off. For more information, see Touchscreen speaker volume, page 142.
❸	Integrated lightbar with 27 LEDs	When lit, the LEDs show the position of your vehicle relative to your intended guidance line. For more information, see Reading lightbar patterns, page 41.

CAUTION – Do not press on the screen with a sharp item, such as a pencil or screwdriver; you may damage the surface of the screen.

Back view

Item	Description	Notes
❶	Power button	Turns the display on or off.
❷ and ❸	Brightness controls ***Note –*** *You can also use the Color Scheme and Backlight menu options to set the screen brightness. See Color Scheme, page 141, and Backlight, page 142.*	• To ***increase*** the brightness of the screen, press ❷. • To ***decrease*** the brightness, press ❸.
❹	USB socket	You can connect a USB memory stick to the display to transfer data to and from the unit. For more information, see The USB socket, page 30.
❺	GPS connector	Connects the GPS cable (P/N 50449) to the display.
❻	Port A	Connects external devices to the display.
❼	Power connection socket	Connects the power cable (P/N 67258) to the display.
❽	Port B	Connects external devices to the display.
❾	Radio access panel	If you purchase the optional RTK module, install the module here. For more information, see the install instructions supplied with the radio module.

Cleaning the touchscreen

To clean the CFX-750 display use the following supplies:

- Ammonia-free glass cleaner

***Note – Do not** apply glass cleaner directly to the touchscreen.*

- Soft, lint-free cotton cloth
- 50% isopropyl alcohol

1. Apply a small amount of glass cleaner to the cloth and gently rub it against the touchscreen.
2. To clean off any stains or smudges, use a cotton cloth dampened with 50% isopropyl alcohol.

Tip – Clean the display while it is switched off. It is easier to see dirt and fingerprints when the touchscreen is dark.

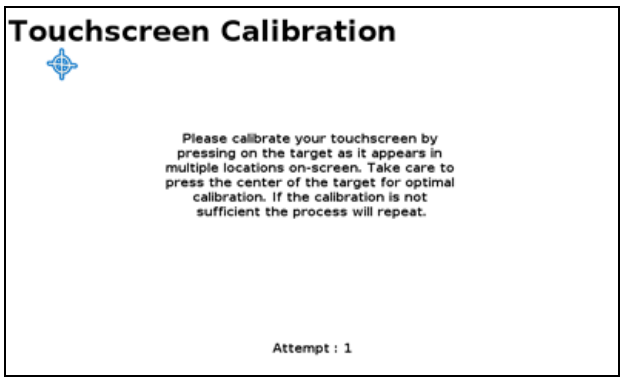
Power up

To turn on the display, press the power button on the rear of the display. After a short time, the *Welcome* screen appears:

Welcome to the CFX-750 Display
Welcome to the CFX-750® Display.
To get you started the following wizard will guide you through the initial setup process.

The first time that you turn on the CFX-750 display, the following wizards appear:

- Touchscreen calibration:

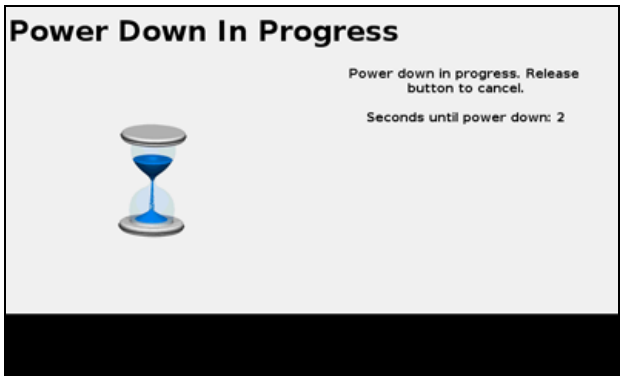

Touchscreen Calibration
Please calibrate your touchscreen by pressing on the target as it appears in multiple locations on-screen. Take care to press the center of the target for optimal calibration. If the calibration is not sufficient the process will repeat.
Attempt : 1

  You must calibrate the touchscreen before you can use the display; to do this, follow the onscreen instructions.

- The Quick Start wizard. To configure your system properly, make sure that you run the entire wizard. See The Quick Start Wizard, page 32.

Power down

To turn off the CFX-750 display, hold down the power button for three seconds. While holding down the power button, the *Power Down In Progress* screen appears:



Note – *To cancel the power down process, release the power button before the three second countdown is complete.*

Resetting the display

Occasionally, you may want to reset the display settings. There are two ways to do this:

- **Soft reset**: This returns all settings to the factory defaults. All saved field data remains intact.
- **Hard reset:** This returns all settings to the factory defaults, ***and*** deletes all saved data including any field data.

Note – *Do not perform a hard reset unless it is absolutely necessary or you are instructed to do so by Trimble Technical Support.*

Soft reset

1. Power down the display and then power it on.
2. Wait until the status bar at the bottom of the second startup screen is over half full:

3. Press the power button and ***top*** brightness control button at the same time:

4. Hold the buttons down until the display beeps.

Hard reset

1. Power down the display and then power it on.
2. Wait until the status bar at the bottom of the second startup screen is over half full:

3. Press the power button and ***both*** brightness control buttons at the same time:

4. Hold the buttons down until the display beeps.

The USB socket

The USB socket is on the rear of the display. See Back view, page 27.

Use the USB socket to manage your data via a USB drive.

USB drive compatibility

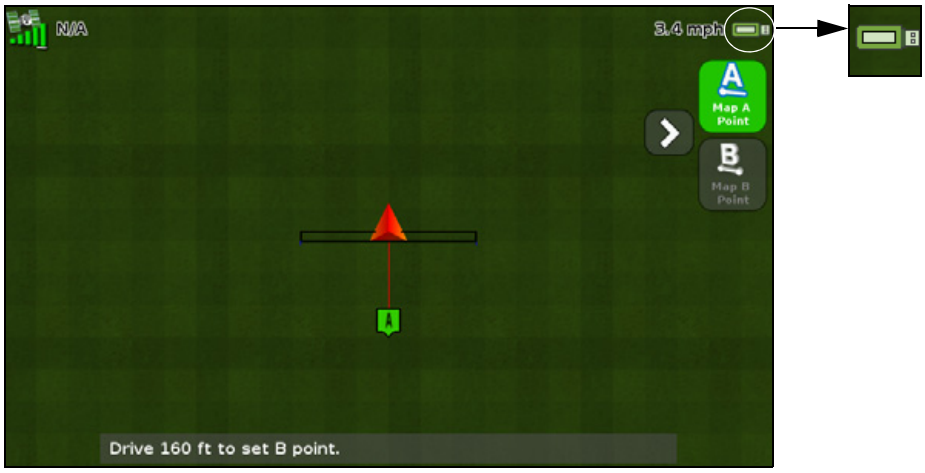
You can use the following USB drives with the CFX-750 display:

- A-Data micro SDHC/SD/USB adapter
- Digital Concepts USB to PC Reader
- Kingston Data Traveler 8 GB
- Lexar Firefly 1 GB
- Lexar Secure II Plus
- PNY Micro Swivel Attache 4GB
- PNY Mini Attache 8 GB
- SanDisk Cruzer Gator 4GB
- Toshiba TransMemory U2M-004GTA 4GB
- ADATA Classic C801 8GB
- Generic USB - uDHC adapter with Transcend 8GB microSDHC card
- Kingston Data Traveler 101
- Lexar JumpDrive TwistTurn
- PNY Attache
- PNY Mini Attache 4 GB
- SanDisk Cruzer
- SanDisk Cruzer Micro 1GB
- Transcend JetFlash

Inserting a USB drive

1. Rotate the display so you that can see the back of it.
2. Insert the USB drive into the USB socket.

   When the USB drive is properly inserted, the USB icon appears on the guidance screen:



   The color of the USB icon indicates the current state of the USB drive:

   – Green: the USB drive is connected.

   – Yellow: the USB drive is connecting.

   – Red: the connection to the USB drive has been lost.

Removing a USB drive

CAUTION – Do not remove the USB drive from the socket while the display is writing to or from the drive. This will corrupt the data.

1. Rotate the display so that you can see the back of it.
2. Pull the USB drive out of the USB socket.

Taking a screenshot

Occasionally, you may want to save a screenshot of the touchscreen, for example to provide information for troubleshooting purposes. When you take a screenshot, the display saves a .png file to the root directory of the USB drive.

Note – *Screenshot capability is only available when there is a USB drive inserted in the display,*

To take a screenshot:

1. Press ***both*** brightness control buttons at the same time:

2. Hold the buttons down until the touchscreen flashes.

CAUTION – Do not remove the USB drive from the socket while the display is writing to or from the drive. This will corrupt the data.

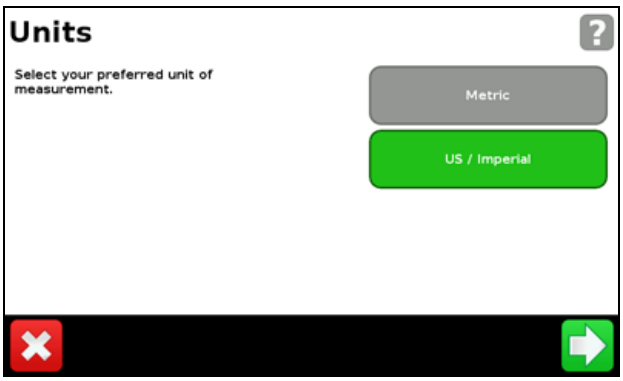
The Quick Start Wizard

The Quick Start Wizard enables you to configure important settings before you begin driving. The first time that you turn on the display, the wizard starts automatically. Make sure that when you first turn on the display that you run the entire wizard.

When you run the wizard, you can choose whether or not it appears every time the display is turned on. If you choose to hide the wizard, when you next power up the display, the guidance screen automatically appears. However, you can still access the wizard at a later time, as follows:

1. Tap and then tap .
2. Tap **Quick Start Wizard**. The *Welcome* screen appears.

3. Tap . The first page of the Quick Start Wizard appears:



4. To set up your system, complete each page of the wizard. See the section below.

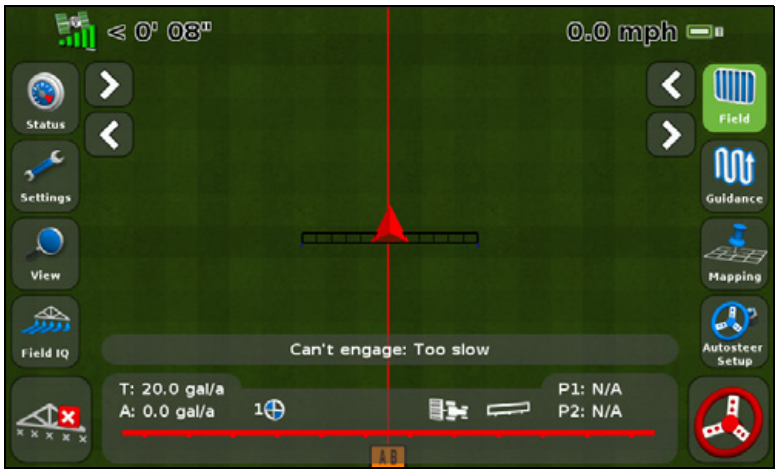
Using the setup wizards

The CFX-750 display contains various wizards that guide you through the task of configuring your system. The following table describes how to use the wizards to enter your system settings.

To ...	Tap ...
Select the setting you require	The field that displays the desired value. When you make your selection, the field changes color from gray to green.
Enter the numbers that you require	
Enter text	
Accept the selection and go to the next screen	
Accept the selection and exit the screen	

To ...	Tap ...
Navigate the wizard	
Go back to the previous page	
Exit the wizard ***Note –*** *When you exit the wizard, the system retains any settings you have already selected; for any settings that you have not yet entered, the system uses the settings from the previous configuration.*	
Access the on-screen help	

The guidance screen



The guidance screen displays a mix of text and icons that provide operating information and access to various system functions. The availability of the text and icons depends on the set up of your system. For example, some icons are not available while you are using an auto steer system.

To activate an icon, tap it with your finger. If the display does not respond when you tap it, see Recalibrate touchscreen, page 148.

The following sections describe the icons that can appear on the guidance screen.

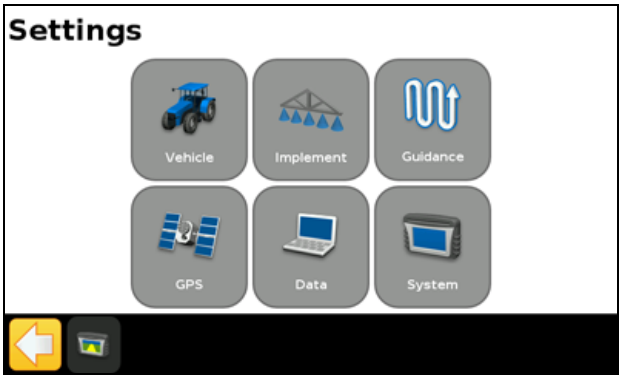
Status

Tapping scrolls through several pop-up screens that describe various system settings:

To remove the pop-ups, continue to tap until they disappear.

Settings

Tap to open the *Settings* screen:



Use the *Settings* screen to adjust your system settings, and view the status of the following:

Setting	For more information, see ...
Vehicle	Chapter 4, Vehicle, page 47
Implement	Chapter 5, Implement Application Controller, page 67
Guidance	Chapter 6, Mapping and Guidance, page 103
GPS	Chapter 7, GPS, page 121
Data	Chapter 8, Data, page 127
System	Chapter 9, System, page 139

View

The options for viewing the guidance screen are:

- Zoom In
- Zoom Out
- Change View

Note – *Change View toggles between the Overhead view and Trailing view icons.*

- Panning Mode

To:

- ***change*** the view, tap , and then select the option that you require.
- ***exit*** a view and return to the guidance screen, tap .

To learn how to change the View settings, see View, page 141.

Zooming

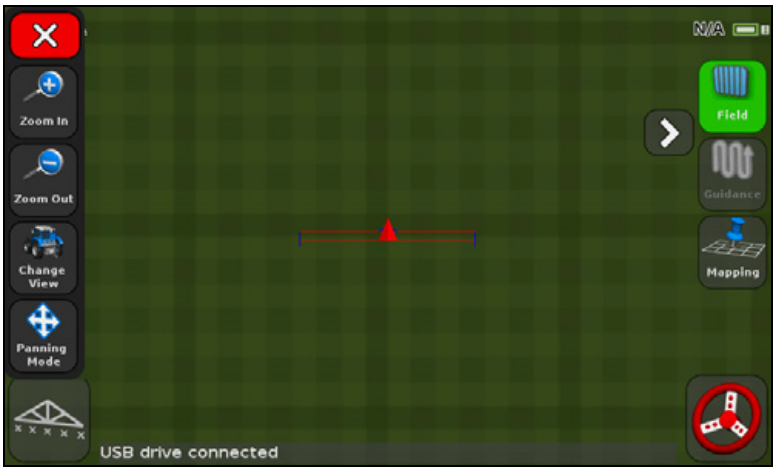
To zoom in or out on the guidance screen, tap either or .

Viewing modes

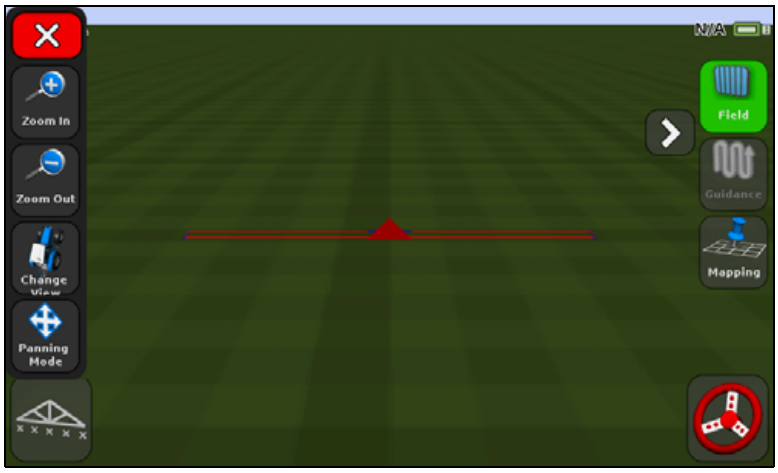
There are two viewing modes, Overhead and Trailing.

By default, the view switches from Overhead to Trailing when you approach the AB line.

To access the Overhead view, tap .



To access the Trailing view, tap .



Extended icons

The guidance screen features several extended icons that are hidden in the default view.

To access or hide the extended icons, tap or .

The following images show how the extended icons appear on the guidance screen when they are expanded and collapsed:

Expanded

Collapsed

Quick Access icon

You can use the Quick Access icon to quickly adjust common settings.

The items that appear in the Quick Access menu will vary depending on the applications that you are currently running.

The following sections describe the items that may appear.

Note – *The Quick Access icon only appears when you are running Field-IQ or a variable rate controller.*

Boom setup

Use this option to view and adjust the following settings:

Value ...	Notes ...
Implement width	Enter the width of the current implement. The display uses this value to automatically calculated the swath spacing. Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Boundaries	See Boundary setup, page 107.
Number of sections	Enter the number of sections you want to control on the implement. Enter a number between 1 - 10.

Refill

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Current volume	Set the current volume of the tank or bin.
Refill method	Choose from one of the following options: • ***Refill***: to fill the tank or bin to the top • ***Partial Refill***: to add a specified amount to the tank or bin when you select **Partial Refill Now** from the *Refill* screen.
Refill Now / Partial Refill Now	Use this option to refill the tank or bin.

Section Switching Setup

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Coverage switching overlap	Control the amount of boom switching overlap allowed before the system switches that section. Enter a percentage between 1-99%. For: • ***Less skip***: Set a high percentage when total coverage is essential. The system will turn off sections when they cover a larger percentage of any fully covered areas. This may cause some double-coverage. Sections will turn on as soon as they move from a covered to an uncovered area. • ***Less overlap***: Set a low percentage when you need to save product. The system will turn off sections as soon as you reach any covered area. This may leave some skips. Sections will turn on when the entire section has moved from a covered to an uncovered area.
Refill method	Choose from one of the following options: • ***Refill***: to fill the tank or bin to the top • ***Partial Refill***: to add a specified amount to the tank or bin when you select **Partial Refill Now** from the *Refill* screen.
Refill Now / Partial Refill Now	Use this option to refill the tank or bin.

Boundary switching overlap

Use this option to control the amount of overlap on a boundary before the system switches off the boom section. Enter a percentage between 1-99%.

Note – *This setting only operates when the boom is overlapping a headland, or pivot boundary, or exclusion zone.*

For:

- ***Less skip***: Set a high percentage when it is acceptable to apply outside the boundary.
- ***Less overlap***: Set a low percentage when you do not want to apply outside the boundary. A very low setting may cause some skip at the boundary.

On/off valve latency

This option allows for hardware delays by adjusting the amount of time needed before turning the valves on or off.

To use this option:

1. Measure the amount of time it takes (in seconds) for the system to reach the correct rate after you have switched it on or off.
2. Enter a time between 0.0 - 10.0 seconds.

Intentional overlap

You can use this option to make sure that when applying, there are no gaps in coverage if you move into an uncovered area or out of a covered area.

Use this option ...	To set the distance that you want to travel before...
On overlap distance	***Exiting*** a covered area and switching the implement ***on***
Off overlap distance	***Entering*** a covered area and switching the implement ***off***

Target rate

Use this option to set the target application rate (the amount of product you want to apply). Enter a number between 1333 - 41333.

Valve aggressiveness

If you use an auto steer system, such as an EZ-Steer or Autopilot system, you can use this option to adjust how the system responds to steering changes.

Note the following:

- A higher setting brings the vehicle back on line quickly, but may cause tight oscillations.
- A lower setting gives a more moderate response to bringing the vehicle back on line, but can avoid overshoot.

Enter a setting between 50 - 150%.

The Field icon

From the guidance screen, tap to create a new field or select an existing field. See Chapter 6, Mapping and Guidance.

The Guidance icon

From the guidance screen, tap to quickly nudge, shift or resume a guidance line:

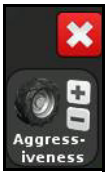
The Mapping icon

From the guidance screen, tap to quickly add or delete the following features:

- rock
- line
- tree
- area
- weed
- exclusion

The Auto steer icon

From the guidance screen, tap to quickly adjust the aggressiveness setting for the EZ-Steer or Autopilot system:



Reading lightbar patterns

When lit, the LEDs show the position of your vehicle relative to your intended guidance line. As your vehicle position changes in relation to the guidance line, the LEDs move left or right.

Use the lightbar to obtain accurate guidance when:

- you have set an implement offset or implement draft
- fine-tuning guidance on straight swaths

The LEDs in the integrated lightbar show the position of your vehicle relative to the guidance line:

- When your vehicle is on the guidance line, the three central green LEDs are lit.

- As your vehicle moves off the guidance line, the lit LEDs move left or right, and change to red. Note that the LED pattern that appears has a different meaning for each Main Lightbar LED Mode. For more information, see the table below, and Lightbar Setup, page 142.

This LED pattern ...	Indicates that the vehicle is ...
	Directly on the guidance line.
	Off the guidance line. For this pattern, if the Main Lightbar LED Mode is set to: • **Chase**, the vehicle is offline to the ***left***. • **Pull**, the vehicle is offline to the ***right***.
	Off the guidance line. For this pattern, if the Main Lightbar LED Mode is set to: • **Chase**, the vehicle is offline to the ***right***. • **Pull**, the vehicle is offline to the ***left***.

Using the EZ-Remote joystick

Optionally, you can use an EZ-Remote joystick to control the CFX-750 display. The joystick has ten LED buttons: six have preset functions; you can assign one of the following functions to each of the other four:

- Map a rock, tree, or weed
- Start or finish a line
- Start or finish an area
- Start or finish an exclusion zone
- Turn coverage on or off
- Camera A or Camera B control
- Show trailing map view
- Show overhead map view
- Zoom
- Show status

To learn how to assign a function to a programmable button, see EZ-Remote joystick, page 144.

On-screen icons

The tables in this section describe all of the icons available on the CFX-750 display.

Note – *Icons appear only when they are appropriate. They are not visible at all times.*

To activate an icon, tap it with your finger. If the display does not respond when you tap it, see Recalibrate touchscreen, page 148.

System icons

Icon	Description
	System and display setup
	Autopilot setup
	GPS/GLONASS setup
	Data configuration
	Help
	Settings / Configuration
	Next page
	Back page

Icon	Description
	Menu
	Configure
	Status
	Setup wizard
	Edit item
	Delete
	Cancel changes
	Accept / save changes

Information icons

Icon	Description
	Setup complete
	Critical warning

Icon	Description
	General alert
	Information

View icons

Icon	Description
	Activate external video input
	Full screen external video
	Run screen trailing view
	Run screen overhead view

Icon	Description
	Pan view
	Zoom in
	Zoom out

Application icons

Icon	Description
	Manual section control
	Automatic section control
	Target rate

Icon	Description
	Section control off
	Coverage logging on
	Coverage logging off

Guidance icons

Icon	Description
	Guidance pattern select
	Pause guidance
	Nudge left
	Nudge right
	Record FreeForm guidance pattern
	Set A point
	Set B point
	Shift AB line
	Next AB line

Icon	Description
	Start recording headland
	Pause recording headland
	End headland recording
	Cannot engage auto guidance
	Ready to engage auto guidance
	Auto guidance engaged
	Increase auto guidance aggressiveness
	Decrease auto guidance aggressiveness

Mapping icons

Icon	Description
	Map line feature
	Map tree (point feature)
	Map rock (point feature)

Icon	Description
	Mapping configuration
	Area feature

CHAPTER

4

Vehicle

In this chapter:

- Introduction
- The EZ-Steer assisted steering system
- The EZ-Pilot assisted steering system
- The Autopilot automated steering system

This chapter describes how to configure your auto steer system for use with the CFX-750 display.

Introduction

To ensure the proper performance of your auto steer system, you need to calibrate it correctly. Before you calibrate your auto steer option, do the following:

- Ensure that the vehicle's hydraulic oil is up to operating temperature. Refer to the vehicle documentation.
- Ensure that the tire pressure is correct.
- Complete the GPS Setup on the CFX-750 display. For more information, see Chapter 7, GPS.

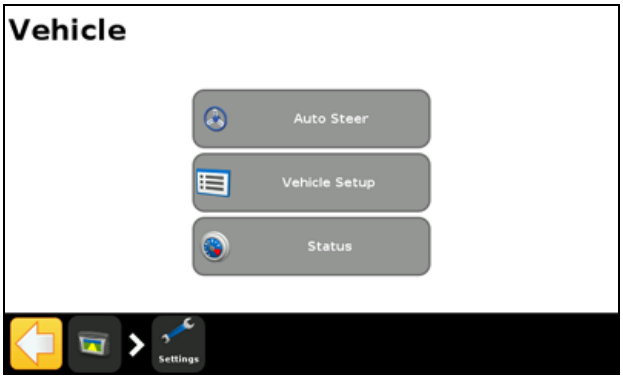
When you calibrate your auto steer option, pay attention to the following:

- Choose a field with the smoothest possible surface and perform the calibration at the normal operating speed for the vehicle.
- For a high-clearance sprayer, perform the initial calibration without an implement or with the booms folded in. After the initial calibration is completed, you can fine tune the settings with the implement or booms folded out.

The calibration process requires a straight AB line. If you do not create an AB line before you begin the calibration, the system prompts you to open a field and create one.

To access the auto steer options:

1. In the guidance screen, tap and then tap **Vehicle**.
2. Tap **Auto Steer**:



The EZ-Steer assisted steering system

The EZ-Steer® assisted steering system works with the CFX-750 display's internal GPS receiver to provide vehicle guidance. As such, you must complete the GPS setup before you calibrate, set up or run your EZ-Steer system. See Chapter 7, GPS.

Setup

To view and adjust the settings for the EZ-Steer system:

1. In the guidance screen, tap and then tap **Vehicle**.
2. Tap **Auto Steer** and then **EZ-Steer Setup**:

Note – *If the EZ-Steer Setup button does not appear, tap Auto Steer System Type and then select EZ-Steer for your controller.*

The EZ-Steer Setup screen contains the following options:

- Engage Options
- Vehicle Setup
- Aggressiveness
- EZ-Steer Demo
- EZ-Steer Calibration Wizard

The following sections describe each option.

Engage Options

Use this option to view and adjust the settings described below:

Setting ...	Notes ...
Minimum/Maximum speed	Enter the minimum and maximum speeds at which the EZ-Steer system will disengage: • ***Minimum***: between 1.0 and 15.9 mph (1.6 and 25.5 kph). • ***Maximum***: between 1.0 and 18.0 mph (1.6 and 28.8 kph).
Maximum Angle	The EZ-Steer system will not engage when the vehicle is heading toward the guidance line at an angle greater than the Maximum Angle. Enter an angle between 5 and 45 degrees.
Engage/Disengage Offline	Engage offline: The system will not engage when the vehicle is offline further than the Engage Offline distance. Enter a distance between 0' 5" and 27' 0" (0.2 and 8.2 m). Disengage offline: The system will automatically disengage when the vehicle is offline further than the Disengage Offline distance. Enter a distance between 0' 6" and 27' 00" (0.2 m and 8.2 m).
Override sensitivity	Control how much force is required to disengage the system. Enter an increment between 1-100%.
EZ-Steer external switch	Enable or disable additional safety features.
EZ-Steer operator timeout	Enter a time between 1-60 minutes.

Vehicle Setup

Use this option to view and adjust the settings described below:

Setting ...	Notes ...
Vehicle type	Enter the type of vehicle on which the EZ-Steer system will be installed.
Wheelbase	See Entering vehicle measurements, page 52.
Antenna height	See Entering vehicle measurements, page 52.
Antenna to axle offset	See Entering vehicle measurements, page 52.
Angle per turn	Adjust the angle that the wheels turn during one full rotation of the steering wheel. Enter an angle between 2-149 degrees.
Freeplay left/right	Adjust this setting if the vehicle is consistently off to the right or left of the guidance line. Enter a measurement of 0-12" (0-30.48 cm).
Motor speed	Control the speed of the EZ-Steer drive wheel motor.
Motor direction is reversed	Select yes or no.
Sprayer steering delay	Account for time lags with vehicle steering. Enter a value between 0.1-1.5.
Swather steering delay	Account for time lags with vehicle steering. Enter a value between 0.1-1.5.

Aggressiveness

Use this option to view and adjust the settings described below:

Setting ...	Notes ...
Online aggressiveness	Control how aggressively the EZ-Steer system corrects deviations from the guidance line. Enter a value between 50-150%.
Approach aggressiveness	Control how fast the EZ-Steer system steers the vehicle onto the guidance line. Enter a value between 50-150%

EZ-Steer Demo

Use this option to access the EZ-Steer Demo Mode.

EZ-Steer Demo Mode is useful for practice with defining fields, coverage logging, and assisted steering. EZ-Steer Demo Mode requires an EZ-Steer controller, motor, and EZ-Steer simulator stand (P/N 54836-00).

EZ-Steer Calibration Wizard

The EZ-Steer Calibration Wizard guides you through the process of calibrating your EZ-Steer system.

Calibration

Before you begin to use the display you must calibrate the EZ-Steer system. To do this, complete the Quick Start Wizard (see The Quick Start Wizard, page 32) that appears the first time that you use the display.

To calibrate the EZ-Steer system at a later time, complete the following process:

1. In the guidance screen, tap and then tap **Vehicle**.
2. Tap **Auto Steer** and then **EZ-Steer Setup**:

Note – *If the EZ-Steer Setup button does not appear, tap Auto Steer System Type and then select EZ-Steer for your controller.*

3. In the EZ-Steer Setup screen, tap **EZ-Steer Calibration Wizard**.

The wizard guides you through the following processes:

- Entering your vehicle measurements
- T2 roll calibration
- EZ-Steer calibration

Note – *To complete the above processes, you must have GPS connected.*

Entering vehicle measurements

For optimum guidance, you must take accurate vehicle measurements and enter them into the display.

Note – *Do not enter calibration numbers from EZ-Guide Plus or EZ-Steer T2 systems. This may cause very poor vehicle control, including swerves and/or large oscillations.*

To streamline the calibration process, you may want to take the vehicle measurements and record them for entry later on.

The techniques for taking vehicle measurements are described below; to learn about implement measurements, see Implement Setup options, page 108.

Before you take the measurements, position your vehicle as follows:

1. Park the vehicle on level ground.
2. Make sure that the vehicle is straight, with the centerline of the body parallel to the wheels.
3. Take the vehicle measurements:

To take this measurement ...	Measure from the ...	
Wheelbase	Center (the axle) of the front wheel to the center of the back wheel. Note that the wheelbase measurement for: • ***Tracked vehicles***, is exactly half of the length of the track • ***Articulated 4WD vehicles***, is half of the distance between the center of the front and rear wheels.	

To take this measurement ...	Measure from the ...	
Antenna height	Ground to the top of the GPS antenna.	
Antenna to axle offset	Center (the axle) of the front or rear wheel to the top of the GPS antenna. ***Note –*** *Make sure that you take this measurement to within 7.6 cm (3 in.) as an incorrect distance may result in poor steering performance.* Take the measurement from the antenna to the correct point of your vehicle, as follows: • ***Rear axle***: - MFWD - Sprayer - Floater - Truck • ***Front axle***: - 4wd tractor - Combine • ***Track center***: - Tracked tractor If the antenna is: • in ***front*** of the axle, enter a ***Forward*** distance • ***behind*** the axle, enter a ***Behind*** distance	

T2 roll calibration

Calibrating the T2 roll sensor enables the display to calibrate terrain compensation in the EZ-Steer controller. This step requires you to:

- Enter an accurate value for controller orientation.
- Park the vehicle and mark the inside of both sets of wheels.
- Remain stationary while the system calculates the roll offset. This takes approximately 20 seconds.
- Turn the vehicle around and ensure the wheels are over the positions marked in the previous step.
- Remain stationary while the system calculates the roll offset. This takes approximately 20 seconds.

EZ-Steer calibration

In this step you must drive and engage on a straight AB line in a clear field:

1. Begin driving and tap .
2. Drive 160 feet and then tap .

A series of calibration screens will allow you to adjust any settings as necessary.

Operation

You must calibrate and set up the EZ-Steer system before operation.

Engaging the system

Before you can engage the EZ-Steer system, you must:

- open a field in the guidance screen
- define an AB line
- position the vehicle within the configured engage limits

To engage the system:

1. Point the nose of the vehicle toward the guidance line and drive at operational speed.
2. Do one of the following:
   - From the guidance screen, tap .
   - Press the optional remote engage foot pedal.

Disengaging the system

The EZ-Steer system automatically disengages when one of the following happens:

- The vehicle is outside the configured engage limits.
- You pause the system.
- GPS positions are lost.
- You tap the **Engage** button on the guidance screen.

You can manually disengage the EZ-Steer system by turning the steering wheel (this overrides the electric motor). Check this setting before you start using the system by engaging on a line and then turning the wheel until the system disengages. To adjust the amount of force required to disengage the system, change the Override Sensitivity in the Engage Options screen.

Engage status indicators

Engage status	Icon color
Ready to engage	
Engaged	
Cannot engage	

Curve Auto steering Accuracy in Headlands

It is possible to engage the EZ-Steer system on headlands with sharp corners at the edge of the field. However, the EZ-Steer system may be unable to drive around these sharp bends. Use one of the following methods to compensate:

- Manually steer the vehicle around the corner. Once you have rounded the corner, re-engage the EZ-Steer system.
- In the Engage Options screen, increase the Disengage Offline distance.

Vehicle-specific performance

Before you use the EZ-Steer system, consider the following performance suggestions.

Vehicle type	Performance hint
2WD tractor	With tractors that have SuperSteer (for example, New Holland TG), if the tractor has a SuperSteer front axle, for best performance: • Reduce the Online Aggressiveness value. • Line up close to the swath and make certain that the front wheels are straight before engaging the EZ-Steer system. • To get smoother performance when the vehicle is pulling an implement over tilled ground, enable the Diff-Lock. This prevents the machine from pulling sharply to the left or right. If you are calibrating on a hard surface, turn off Diff-Lock.
4WD tractor	The EZ-Steer system can be installed on Case IH STX tractors with Accusteer. For optimal performance, disable Accusteer using the switch in the cab (if possible).

Vehicle type	Performance hint
Sprayer	• It is common for these vehicles to have slow steering. To compensate for this, use high aggressiveness. • If you experience large, slow oscillations, increase the aggressiveness. • When you configure the system on a sprayer, the Sprayer steering delay setting is available on the *Vehicle Setup* screen. • Some sprayers have steering that is slow to react after you turn the steering wheel.The system uses the steering delay setting to compensate for this slowness and ensure that steering corrections occur at the correct point.
Swather	• When you configure the system on a swather, the Swather steering delay setting is available on the Vehicle Setup screen. • Some swathers have steering that is slow to react after the steering wheel is turned. The system uses the steering delay setting to compensate for this slowness and ensure that steering corrections occur at the correct point. • To improve the performance of your swather, adjust the Swather steering delay setting by a small amount (0.1 seconds) at a time. Test the result between each adjustment

After using the EZ-Steer system

- Any time that you are not using the EZ-Steer system, pivot the EZ-Steer motor away from the steering wheel.
- ***Before*** you leave the vehicle turn off the EZ-Steer system power switch or remove the power plug.

The EZ-Pilot assisted steering system

The EZ-Pilot™ assisted steering system works with the CFX-750 display's internal GPS receiver to provide vehicle guidance. As such, you must complete the GPS setup before you calibrate, set up or run your EZ-Pilot system. See Chapter 7, GPS.

Setup

To view and adjust the settings for the EZ-Pilot system:

1. In the guidance screen, tap and then tap **Vehicle**.
2. Tap **Auto Steer** and then **EZ-Pilot Setup**:

Note – *If the EZ-Pilot Setup button does not appear, tap Auto Steer System Type and then select EZ-Pilot for your controller.*

The EZ-Pilot Setup screen contains the following options:

- Engage Options
- Vehicle Setup
- Aggressiveness
- Vehicle Calibration menu

The following sections describe each option.

Engage Options

Use this option to view and adjust the settings described below:

Setting ...	Notes ...
Minimum/Maximum speed	Enter the minimum and maximum speeds at which the EZ-Pilot system will disengage: • ***Minimum***: between 1.0 and 15.9 mph (1.6 and 25.5 kph). • ***Maximum***: between 1.0 and 18.0 mph (1.6 and 28.8 kph).
Maximum Angle	The EZ-Pilot system will not engage when the vehicle is heading toward the guidance line at an angle greater than the Maximum Angle. Enter an angle between 5 and 45 degrees.
Engage/Disengage Offline	Engage offline: The system will not engage when the vehicle is offline further than the Engage Offline distance. Enter a distance between 0' 5" and 27' 0" (0.2 and 8.2 m). Disengage offline: The system will automatically disengage when the vehicle is offline further than the Disengage Offline distance. Enter a distance between 0' 6" and 27' 00" (0.2 m and 8.2 m).
Override sensitivity	Control how much force is required to disengage the system. Enter an increment between 1-100%.
Operator timeout	Enter a time between 1-60 minutes.

Vehicle Setup

Use this option to view and adjust the settings described below:

Setting ...	Notes ...
Vehicle type	Enter the type of vehicle on which the EZ-Pilot system will be installed.
Wheelbase	See Entering vehicle measurements, page 59.
Antenna height	See Entering vehicle measurements, page 59.
Antenna to axle offset	See Entering vehicle measurements, page 59.
Freeplay left / right	Drives consistently to one side of the line. • If the vehicle is offline to the left, increase the Freeplay offset to the right. • If the vehicle is offline to the right, increase the Freeplay offset to the left.
Motor speed	Control the speed of the EZ-Pilot drive wheel motor.

Aggressiveness

Use this option to view and adjust the settings described below:

Setting ...	Notes ...
Online aggressiveness	Control how aggressively the EZ-Pilot system corrects deviations from the guidance line. Enter a value between 50-150%.
Approach aggressiveness	Control how fast the EZ-Pilot system steers the vehicle onto the guidance line. Enter a value between 50-150%

Vehicle Calibration Menu

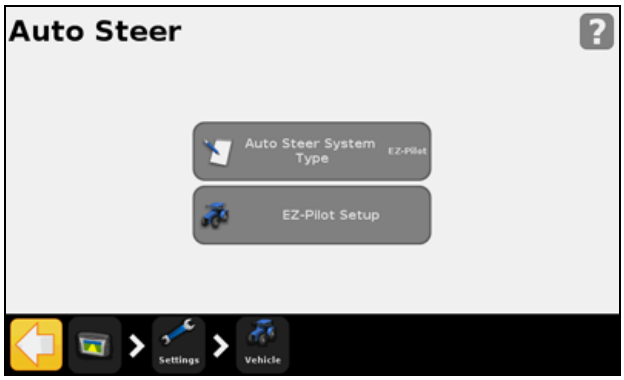
See Angle Per Turn calibration, page 61

Calibration

Before you begin to use the display you must calibrate the EZ-Pilot system. To do this, complete the Quick Start Wizard (see The Quick Start Wizard, page 32) that appears the first time that you use the display.

To calibrate the EZ-Pilot system at a later time, complete the following process:

1. In the guidance screen, tap and then tap **Vehicle**.
2. Tap **Auto Steer** and then **EZ-Pilot Setup**:



Note – *If the EZ-Pilot Setup button does not appear, tap Auto Steer System Type and then select EZ-Pilot for your controller.*

3. In the EZ-Pilot Setup screen, tap **EZ-Pilot Calibration Wizard**.

The wizard guides you through the following processes:

- Entering your vehicle measurements
- T3 roll calibration
- EZ-Pilot calibration

Note – *To complete the above processes, you must have GPS connected.*

Entering vehicle measurements

For optimum guidance, you must take accurate vehicle measurements and enter them into the display.

Note – *Do not enter calibration numbers from EZ-Guide Plus or EZ-Steer systems. This may cause very poor vehicle control, including swerves and/or large oscillations.*

To streamline the calibration process, you may want to take the vehicle measurements and record them for entry later on.

The techniques for taking vehicle measurements are described below; to learn about implement measurements, see Implement Setup options, page 108.

Before you take the measurements, position your vehicle as follows:

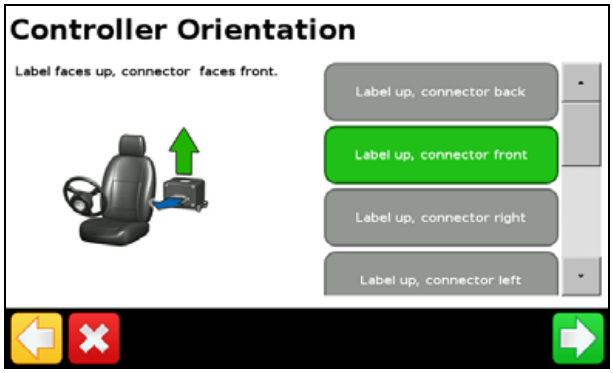
1. Park the vehicle on level ground.
2. Make sure that the vehicle is straight, with the centerline of the body parallel to the wheels.
3. Take the vehicle measurements:

To take this measurement ...	Measure from the ...	
Wheelbase	Center (the axle) of the front wheel to the center of the back wheel. Note that the wheelbase measurement for ***tracked vehicles*** is exactly half of the length of the track.	
Antenna height	Ground to the top of the GPS antenna.	
Antenna to axle offset	Center (the axle) of the front or rear wheel to the top of the GPS antenna. ***Note –*** *Make sure that you take this measurement to within 7.6 cm (3 in.) as an incorrect distance may result in poor steering performance.* Take the measurement from the antenna to the correct point of your vehicle, as follows: • ***Rear axle***: - MFWD - Sprayer - Floater - Truck • ***Front axle***: - 4wd tractor - Combine • ***Track center***: - Tracked tractor If the antenna is: • in ***front*** of the axle, enter a ***Forward*** distance • ***behind*** the axle, enter a ***Behind*** distance	

T3 roll calibration

Calibrating the T3 roll sensor enables the display to calibrate terrain compensation in the IMD-600. This step requires you to:

1. Enter an accurate value for the IMD-600 orientation:


Controller Orientation
Label faces up, connector faces front.
Label up, connector back
Label up, connector front
Label up, connector right
Label up, connector left

2. Park the vehicle and mark the inside of both sets of wheels.
3. Remain stationary while the system calculates the roll offset. This takes approximately 20 seconds.
4. Turn the vehicle around and ensure the wheels are over the positions marked in the previous step.
5. Remain stationary while the system calculates the roll offset. This takes approximately 20 seconds.

Angle Per Turn calibration

Note – *Make sure that you have set the IMD-600 orientation and performed the T3 terrain compensation calibration first.*

Note – *Make sure that you are operating the vehicle in an open field with ample area for the vehicle to make right and left turns.*

1. Tap **Right Angle-Per-Turn Calibration**.
2. Drive forward until appears and then tap the icon.

Note – *For the best results drive the vehicle between 2 and 4 mph.*

3. Allow the system to operate for 20 seconds until you receive a message that the calibration is complete.
4. Repeat Step 1 through Step 3 for left angle-per-turn calibration.

EZ-Pilot system calibration

In this step you must drive and engage on a straight AB line in a clear field:

1. Begin driving and tap .
2. Drive 160 feet and then tap .

A series of calibration screens will allow you to adjust any settings as necessary.

Operation

You must calibrate and set up the EZ-Pilot system before operation.

***Note – Do not** operate the EZ-Pilot system while driving in reverse gear.*

Engaging the system

Before you can engage the EZ-Pilot system, you must:

- open a field in the guidance screen
- define an AB line
- position the vehicle within the configured engage limits

To engage the system:

1. Point the nose of the vehicle toward the guidance line and drive at operational speed.
2. From the guidance screen or the optional remote control, tap .

***Note –** If you use the vehicle on a public roadway, you **must** put the red EZ-Pilot system override switch in the off position.*

Disengaging the system

The EZ-Pilot system automatically disengages when one of the following happens:

- The vehicle is outside the configured engage limits.
- You pause the system.
- GPS positions are lost.
- You tap the **Engage** button on the guidance screen.
- You press the **Engage** button on the optional EZ-Remote joystick.

You can manually disengage the EZ-Pilot system by turning the steering wheel (this overrides the electric motor). Check this setting before you start using the system by engaging on a line and then turning the wheel until the system disengages. To adjust the amount of force required to disengage the system, change the Override Sensitivity in the Engage Options screen.

Engage status indicators

Engage status	Icon color
Ready to engage	
Engaged	
Cannot engage	

Curve Auto-steering accuracy in headlands

It is possible to engage the EZ-Pilot system on headlands with sharp corners at the edge of the field. However, the EZ-Pilot system may be unable to drive around these sharp bends. Use one of the following methods to compensate:

- Manually steer the vehicle around the corner. Once you have rounded the corner, re-engage the EZ-Pilot system.
- In the *Engage Options* screen, increase the Disengage Offline distance.

Vehicle-specific performance

Before you use the EZ-Pilot system, consider the following performance suggestions.

Vehicle type	Performance hint
2WD tractor	With tractors that have SuperSteer (for example, New Holland TG), if the tractor has a SuperSteer front axle, for best performance: • Reduce the Online Aggressiveness value. • Line up close to the swath and make certain that the front wheels are straight before engaging the EZ-Pilot system. • To get smoother performance when the vehicle is pulling an implement over tilled ground, enable the Diff-Lock. This prevents the machine from pulling sharply to the left or right. If you are calibrating on a hard surface, turn off Diff-Lock.
4WD tractor	The EZ-Pilot system can be installed on Case IH STX tractors with Accusteer. For optimal performance, disable Accusteer using the switch in the cab (if possible).
Sprayer	• It is common for these vehicles to have slow steering. To compensate for this, use high aggressiveness. • If you experience large, slow oscillations, increase the aggressiveness. • When you configure the system on a sprayer, the Sprayer steering delay setting is available on the *Vehicle Setup* screen. • Some sprayers have steering that is slow to react after you turn the steering wheel.The system uses the steering delay setting to compensate for this slowness and ensure that steering corrections occur at the correct point.
Swather	• When you configure the system on a swather, the Swather steering delay setting is available on the Vehicle Setup screen. • Some swathers have steering that is slow to react after the steering wheel is turned. The system uses the steering delay setting to compensate for this slowness and ensure that steering corrections occur at the correct point. • To improve the performance of your swather, adjust the Swather steering delay setting by a small amount (0.1 seconds) at a time. Test the result between each adjustment

After using the EZ-Pilot system

- ***Before*** you leave the vehicle, turn off the power to the display which will turn off the EZ-Pilot system power.
- If transporting the vehicle between fields, or using public roadways, the red EZ-Pilot system override switch must be in the off (down) position.

The Autopilot automated steering system

Note – *For advanced setup options contact your Trimble reseller.*

Setup

To view and adjust settings for the Autopilot system:

1. In the guidance screen, tap and then tap **Vehicle**.
2. Tap **Auto Steer** and then **Autopilot Configuration**:

Note – *If the Autopilot Configuration button does not appear, tap Auto Steer System Type and then select Autopilot for your controller.*

From the Autopilot Configuration screen you can view and adjust the settings for:

- Online Aggressiveness
- Operator Alert Timeout
- End of Row Warning Distance
- NMEA Output. See Chapter 7, GPS.
- Save Vehicle Configuration File (use a virtual keypad to save your current vehicle configuration)

Operation

You must calibrate and set up the Autopilot automated steering system before operation.

Engaging the system

Before you can engage the Autopilot automated steering system, you must:

- open a field in the guidance screen
- define an AB line
- position the vehicle within the configured engage limits

To engage the system:

1. Point the nose of the vehicle toward the guidance line and drive at operational speed.
2. Do one of the following:
   - From the guidance screen, tap .
   - Press the optional remote engage foot pedal.

Disengaging the system

The Autopilot automated steering system automatically disengages when one of the following happens:

- The vehicle is outside the configured engage limits.
- You pause the system.
- GPS positions are lost.
- You tap the **Engage** button on the guidance screen.

You can manually disengage the system by turning the steering wheel (this overrides the electric motor). Check this setting before you start using the system by engaging on a line and then turning the wheel until the system disengages. To adjust the amount of force required to disengage the system, change the Override Sensitivity in the *Engage Options* screen.

Engage status indicators

Engage status	Icon color
Ready to engage	
Engaged	
Cannot engage	

After using the Autopilot automated steering system

- Any time that you are not using the system, pivot the Autopilot automated steering system motor away from the steering wheel.
- ***Before*** you leave the vehicle turn off the system power switch or remove the power plug.

CHAPTER

5

Implement Application Controller

In this chapter:

- Introduction
- Field-IQ
- HARDI 5500 controller
- Raven controllers
- Rawson controller
- Amazone controller
- LH 5000 controller
- Checking the implement connection

This chapter describes how to configure the CFX-750 display to use an implement application controller.

Introduction

The options in the *Implement* screen enable you to configure an implement application controller. such as the Field-IQ crop input control system.

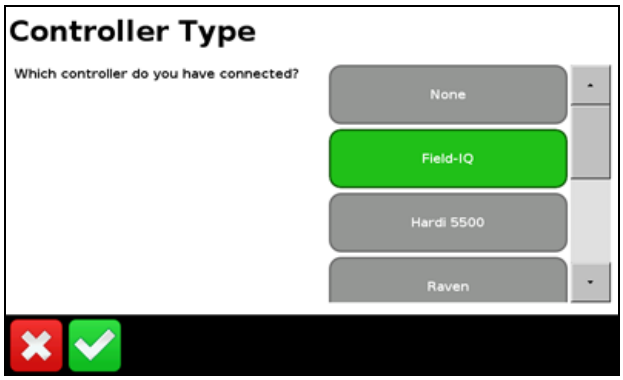
To access the *Implement* screen:

1. From the guidance screen, tap .
2. From the *Settings* screen, tap **Implement**:

The *Implement* screen contains two options, *Advanced* and *Initial Setup*. The *Advanced* option only appears after you have set up your controller via the *Initial Setup* option.

To set up your controller:

1. From the *Implement* screen, Tap **Initial Setup**. The *Controller Type* screen appears.



Note – *To access all of the available Controller Type options (apart from None and Field-IQ) you must have a VRA unlock code. To obtain a VRA unlock code, contact your Trimble reseller.*

2. Select the controller that you are using.

Note – *When you change the controller type, any open field will close.*

3. Configure your controller. For more information, see the following sections:
   - Field-IQ, page 70
   - HARDI 5500 controller, page 81
   - Raven controllers, page 84

- Rawson controller, page 87
- Amazone controller, page 91
- LH 5000 controller, page 93

Prescriptions

The CFX-750 display can use a prescription file to determine the rate of application in different areas of the field.

The prescription file consists of three separate ESRI files: .shp, .dbf and .shx. Each of these files contain different attribute information that the display uses.

You must load a prescription from the USB drive to the internal memory of the CFX-750 display. The display cannot read prescriptions directly from a USB drive. For more information, see the section below.

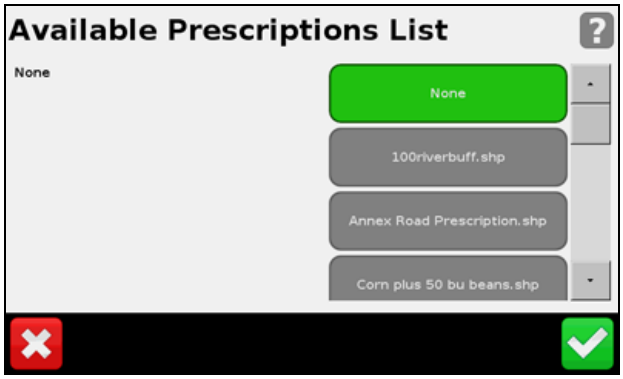
Loading a prescription

1. Copy the prescription file from your computer to the *AgGPS/Prescriptions* folder on your USB drive.

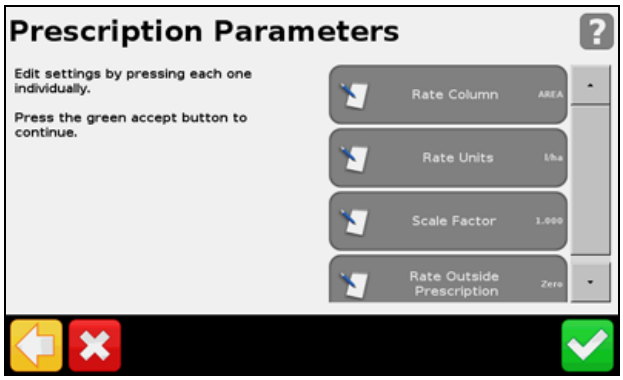
Note – *If you do not have an AgGPS directory on your USB, create one by exporting field data to the USB. For more information, see Sending data to the USB drive, page 137.*

2. Insert the USB drive into the USB socket, and then copy the prescription file to the display's internal memory. See Retrieving data from the USB drive, page 137.
3. From the guidance screen, tap to create a new field or select an existing field.

   The CFX-750 display searches the internal memory for prescription files, and after you define or select a field, the following screen appears in the wizard:



4. Select the prescription file that you require and then tap . The following screen appears:



5. Configure each of the items in the *Prescription Parameters* screen.

CAUTION – For the system to work correctly, you **must** choose the correct Rate Column setting. If you do not, then the applied rate will be incorrect.

Field-IQ

The Field-IQ crop input control system enables the CFX-750 display to control the following:

- planters
- sprayers
- liquid strip-till toolbars
- spinner spreaders

Additionally, it enables the display to use Tru Count air clutches or Tru Count LiquiBlock to perform automatic section control, and/or use a prescription with Rawson drives to control seed or liquid fertilizer rates.

The different functions of the Field-IQ system that you can configure and control are:

Application	Main functions
Planter	• Seed section control of up to 48 individual rows (Field-IQ section control module(s) needed) using Tru Count air clutches. • Seed rate control using up to 4 Rawson drives to change seed population (Field-IQ Rawson Control Module(s) needed). • Liquid fertilizer control of up to 48 individual liquid nozzles (Field-IQ section control module(s) needed) using Tru Count LiquiBlock valves. • Variety tracking.
Sprayer	• Liquid section control of up to 48 individual rows (Field-IQ section control module(s) needed) using existing boom shutoff valves or Tru Count LiquiBlock valves. • Connects to spraying systems that are configured with servo, pump servo, PWM, bypass, dump and master valves.

Application	Main functions
Strip-till (liquid)	• Liquid section control of up to 48 individual spray nozzles (Field-IQ Section Control Module(s) needed) using Tru Count LiquiBlock valves. • Liquid ratecontrol using up to 2 Rawson drives connected to ***fixed displacement pumps,*** such as CDS-John Blue piston pumps, to change liquid rate (Field-IQ Rawson Control Module(s) needed).
Spreading	• Spreading rate control using a Rawson Drive (Field-IQ Rawson Control Module(s) needed).

Definitions

Term	Definition
Section	A number of rows or spray nozzles that are controlled by Tru Count air clutches or Tru Count LiquiBlock valves, or boom valves. A section can have either a single row/nozzle or multiple rows/nozzles depending on how the system is set up.
Row	The individual row unit which material comes from on the implement. This can be controlled individually as a single row section, or as a group with other rows in a multiple row section.
Master Switch Box (MSB)	Master on/off/jump start, auto/manual switch, rate selection, and increment/decrement switch. See Field-IQ master switch box, page 79
12 Section Switch Box (12SSB)	Required for section control. Manually control sections/rows. See Field-IQ 12-section switch box, page 80
Section Control Module (SCM)	Controls 12 sections/rows per module with up to 4 modules (48 module sections/rows).
Rate and Section Control Module (RSCM)	Controls 12 sections and application rate for spraying, spreading and NH3.
Rawson Control Module (RWCM)	Controls 1 Rawson variable rate drive per module with up to 4 modules.
Implement Switch	Included in planter, NH3 and strip-till platform kits.

Units of measure

Type	Unit	Symbol	Description
Seed	Metric	kS/ha	Thousands of seeds per hectare
	US/Imperial	kS/a	Thousands of seeds per acre
Granular seed	Metric	kg/ha	Kilograms of seed per hectare
	US/Imperial	lbs/a	Pounds of seed per acre
Liquid application	Metric	L/ha	Liters per hectare
	US/Imperial	Gal/a	Gallons per acre
Granular fertilizer	Metric	kg/ha	Kilograms of fertilizer per hectare
	US/Imperial	lbs/a	Pounds of fertilizer per acre
NH3	Metric	kg/NH3	Kilograms of anhydrous per hectare
	US/Imperial	lbs/NH3	Pounds of anhydrous per acre
	Metric	kg/N	Kilograms of nitrogen per hectare
	US/Imperial	lbs/N	Pounds of nitrogen per acre

WARNING – Anhydrous ammonia (NH3) can cause severe burning, blindness, or death. Before you begin to operate or service equipment that contains NH3, carefully read and follow all safety instructions in Working with anhydrous ammonia, page 6.

Installing the Field-IQ hardware

For information on installing the Field-IQ crop input control system on your implement, refer to:

- *Field-IQ Platform Installation Instructions*
- *Tru Count Air Clutch Installation Instructions*
- *Rawson Installation Instructions*

For the latest versions of these documents, go to www.trimble.com/agriculture.

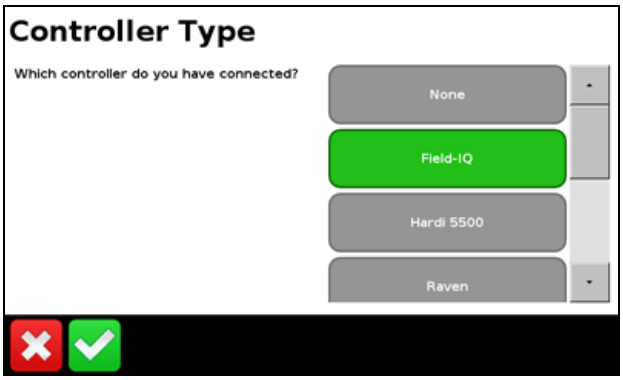
Setting up the Field-IQ system

The CFX-750 display automatically detects the Section Control Modules and/or the Rawson Control Modules installed on your implement. When you use the wizard to set up your Field-IQ system, the screens that appear may differ according to the modules you have installed. If, during the setup, a screen appears that you are unsure of, you can either:

- Tap to go back and check the previous screen(s).
- Tap to discard all of the changes and start again.

To set up your Field-IQ system:

1. From the guidance screen, tap .
2. From the *Settings* screen, tap **Implement.** The *Controller Type* screen appears.
3. Select *Field-IQ*:



4. The *Field-IQ Hardware Summary Screen* appears. Press to continue through the setup wizard.

5. In the *Application Controller Mode* screen, select what you are using the implement for:
   - Row crop planting
   - Liquid
   - Granular seed
   - Granular spreading
   - Anhydrous

Note – *If you change the Application Controller Mode, the display erases any previous calibrations.*

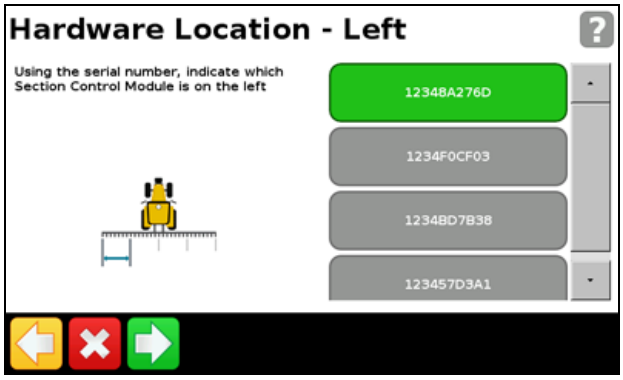
6. In the *Rate and Section Control* screen, select one of the following:
   - Section Control Only
   - Rate Control Only
   - Both

Note – *If you do not have at least one section control box and at least one Rawson control box installed, both options will not appear.*

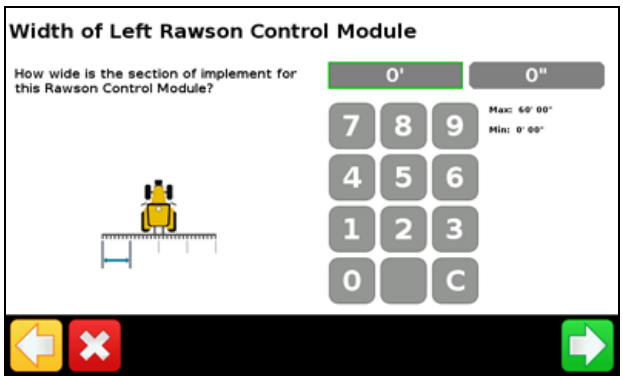
7. In the *Implement Measurements* screen, edit each of the setting items. Note that the items that appear in this screen vary depending on the Application Controller Mode chosen previously.
8. In this part of the wizard, you must indicate the following:

   For Rate Control:

a. Where on your implement each module is located:

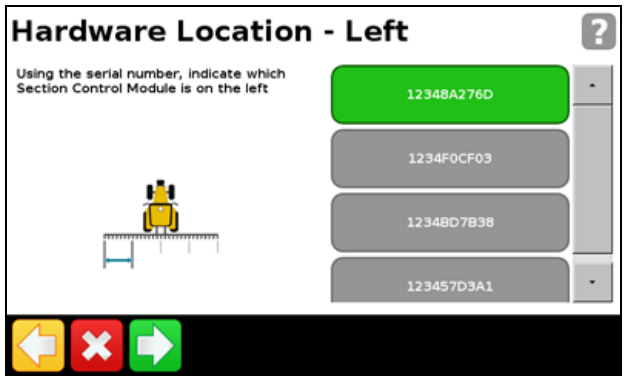


b. For each module, the width of the section it will control:

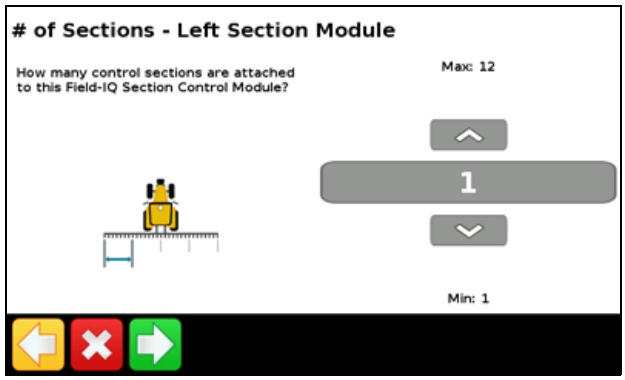


For Section Control:

a. Where on your implement each module is located:

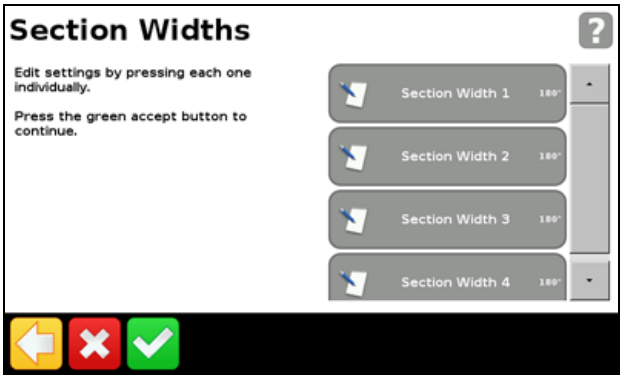


b. For each module, the number of sections it will control:


# of Sections - Left Section Module
How many control sections are attached to this Field-IQ Section Control Module?
Max: 12
1
Min: 1

Note – *You **must** enter accurate values for the system to work properly.*

9. Once you have completed the wizard, you can adjust your section widths if necessary:


Section Widths
Edit settings by pressing each one individually.
Press the green accept button to continue.
Section Width 1
Section Width 2
Section Width 3
Section Width 4

Field-IQ Hydraulics Test

WARNING – MOVING PARTS DURING THIS TEST! Please stay clear of the implement. Ensure the implement is raised, the transmission is in PARK and the emergency brake is applied before continuing.

After the setup wizard is complete, the display tests the hydraulics of your system. During this test you must run the motor(s) at the minimum and maximum RPM and make sure the motor(s) achieve these RPM.

Field-IQ Calibrations

After the hydraulics test is complete, the display calibrates your system. The available calibrations are:

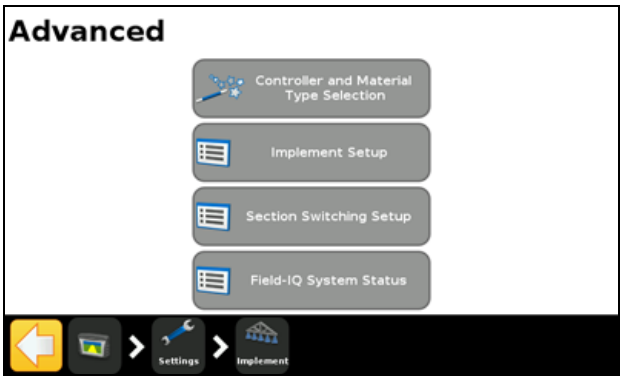
- Field-IQ Rawson Control Module
- Servo Pump or PWM Pump
- Pressure Sensors
- Implement LIft Switch

When the calibration is complete, save the data to a configuration file and export it to the USB drive. See Chapter 8, Data.

Advanced

Use the *Advanced* option in the *Implement* screen to configure the following:

- Controller and Material Type Selection
- Implement Setup
- Section Switching Setup
- Field-IQ System Status



Controller and Material Type Selection

Select this option to return to the *Controller Type* screen. For more information, see Introduction, page 68.

Implement Setup

Use this option to adjust the following settings:

- Implement Measurements. If you select this option, the display returns you to the Implement Measurements screen in the Field-IQ setup wizard. See Step 7, page 73.
- Section Control Module Setup. If you select this option, the display returns you to the second part of the Field-IQ setup wizard. See Step 8, page 73.

Section Switching Setup

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

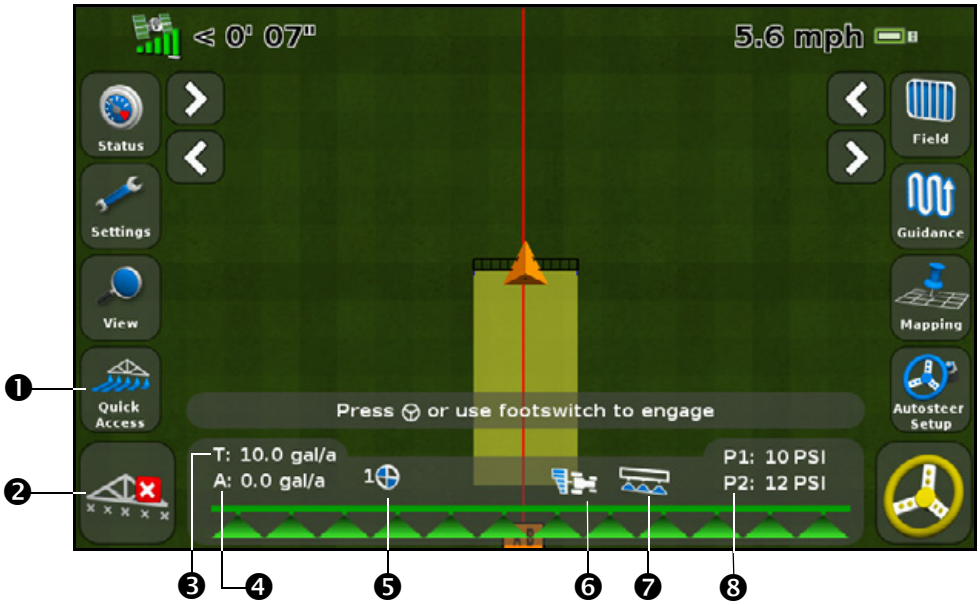
Field-IQ System Status

Select this option to view the status for the following:

- Master Switch Module
- Section Switch Module
- Rate Control Module
- Section Control Module
- OEM Switch Interface
- Accessories

Operation

Once you have enabled, configured and calibrated your Field-IQ crop input control system, the following items appear on the guidance screen:



Item	Description	Notes
❶	Quick Access icon	See Quick Access icon, page 38
❷	Coverage status	On: Inactive: Off:
❸	Target rate	The target application rate for the current rate switch position. This is the amount of product that you want to apply.
❹	Actual rate	The actual application rate. This is the amount of product that is currently being applied.
❺	Rate switch position	Indicates the current position of the rate switch.
❻	Section control	Shows the current mode for the controller. Automatic: Manual:

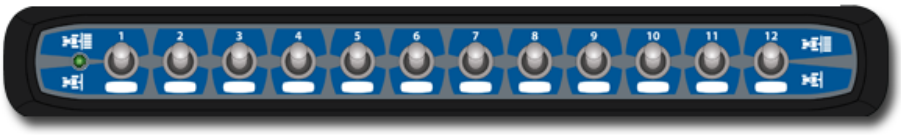
Item	Description	Notes
❼	Master switch status	Master switch on: Master switch off:
❽	Pressure	**P1**: The current pressure reported by the **primary** pressure sensor. **P2**: The current pressure reported by the **secondary** pressure sensor.

Field-IQ master switch box

	Feature	Function
❶	Increment/decrement switch	Increases the applied amount by a set amount (the amount set in the Setup screen, Rate tab).
❷	Rate switch	Choose to use preset Rate 1, preset Rate 2, or Manual rate.
❸	LED indicator	Red – Unit is powered but not communicating with the CFX-750 display. Green – Unit is powered and communicating with the CFX-750 display. Yellow – Unit is initializing communications with the CFX-750 display.
❹	Automatic/Manual section switch	Automatic mode – The CFX-750 display automatically opens and closes sections when entering areas of overlap, non-apply zones, or crossing boundaries. Manual mode – The sections are controlled manually, bypassing the CFX-750 display. **Tip –** You can switch from Automatic to Manual mode while traveling.
❺	Master switch	• **A**. **Jump start** (top position) The sections and rate are ready to be commanded by the CFX-750 display, and the system is overridden to use a preset control speed (the speed is set in the *Setup* screen, *Override* tab). **Tip –** Use the jump start function if you lose a GPS signal or you want to start applying before your implement is up to speed. • **B**. **On** (middle position) The sections and rate are ready to be commanded by the CFX-750 display. • **C**. **Off** (lower position) Sections are closed and rate is set to zero.

Note – *All systems must have a Field-IQ master switch box.*

Field-IQ 12-section switch box



Note – *The 12 section switch box is required for section control. For rate control only, the switch box is optional.*

Only one section switch box can be used on each system. Each section switch is automatically assigned to the corresponding module. The modules are read from left to right. For example, switch 1 assigns to the module furthest on the left when standing behind the implement.

The section switches have different functions, depending upon the status of the master Automatic/Manual section switch on the master switch box.

When the Automatic/Manual section switch is in the ***Automatic*** position:

- If the section switch is in the on/up position the section(s) assigned to it are commanded automatically by the CFX-750 display.
- If the section switch is in the off/down position the section(s) assigned to it are commanded to be off.

When the Automatic/Manual section switch is in the ***Manual*** position:

- If the section switch is in the on/up position, the section(s) assigned to it are commanded to be on. This overrides the CFX-750 display and coverage logging is ignored.
- If the section switch is in the off/down position, the section(s) assigned to it are commanded to be off. This overrides the CFX-750 display and coverage logging is ignored.

The LED has the following status indicators:

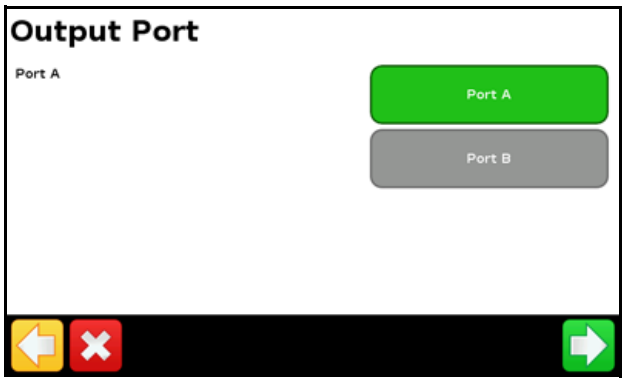
- Green – The unit is powered and is communicating with the CFX-750 display.
- Yellow – The unit is initializing communications with the CFX-750 display.
- Red – The unit is powered but not communicating with the CFX-750 display.

HARDI 5500 controller

Note – *For the HARDI 5500 controller to work correctly with the CFX-750 display, you must install firmware version 3.16 or greater on the HARDI controller and connect a JOBCOM control box.*

Setup

1. Once you select the HARDI 5500 as your controller, the following screen appears on the display:



Note – *Do not configure the display to output NMEA messages on the same port that your controller is connected to.*

2. On the HARDI 5500 controller, go to the *Settings* menu.
3. Change Remote to Enable.

For more information on setting up the HARDI 5500 controller, refer to the HARDI instruction manual.

Advanced

Use the *Advanced* option in the *Implement* screen to configure the following:

- Boom Setup
- Swath Control
- Rate Control
- Off When Stopped
- Rate Snapping

Boom Setup

Note – *The boom setup on the CFX-750 display must match the setup on the HARDI controller. If the boom setup differs between the display and the HARDI controller, a warning message appears on the display.*

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Fence Nozzles	Enter the locations of any fence nozzles.
Number of sections	Enter a number between 1 - 10.

Swath Control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Boom control	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

Rate control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
On	Application rates are sent from a prescription loaded in the display or the target rate manually configured on the display.
Off	The target rate must be set on the HARDI controller. The CFX-750 display does not send target rates to the controller. This is the default setting.

Note – *When sending a target rate to the HARDI 5500 controller that is higher than 99.9, the display rounds to the nearest whole number. For example, 0-99.9 is not rounded. 101.4 is rounded to 101.*

Off When Stopped

You can use this option to control whether the system allows the vehicle to continue operating when it is not moving.

If the vehicle is a clutch-operated planter, select No so you can continue planting even when stopped.

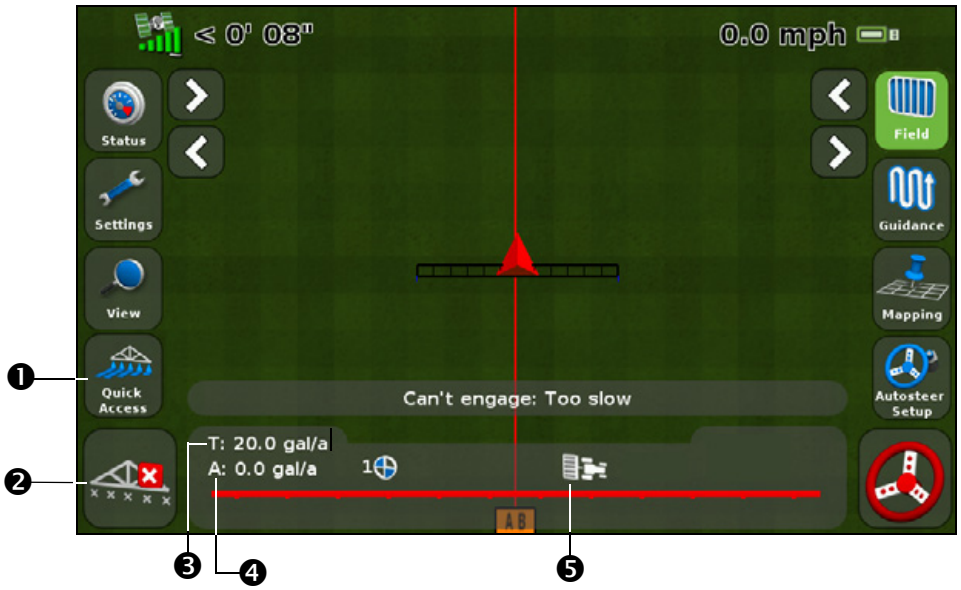
Rate Snapping

Due to pump constraints, liquid flow is generally inconsistent. To control how these inconsistencies appear on your display, turn rate snapping on or off.

Value ...	Notes ...
On	Matches the applied rate to the target rate when within 10% of the value.
Off	Shows all fluctuations in the actual applied rate.

Operation

When you connect the HARDI 5500 controller to the CFX-750 display, the following items appear on the guidance screen:



Item	Description	Notes
❶	Quick Access icon	See, Quick Access icon, page 38.
❷	Boom section status indicators	Shows the current state of each boom section: • Green: Enabled and spraying • Gray: Enabled but not currently spraying • Red: The section is off (the switch is off)
❸	Target rate	If a prescription is loaded, P displays to indicate that the prescription rate is being used rather than the target rate.
❹	Actual rate	As the HARDI controller does not report the actual applied rate to the display, this item always appears as N/A.
❺	Section control	Shows the current mode for the controller.

Item	Description	Notes
	Fence nozzle indicator	This indicator appears only when a fence nozzle is enabled. Fence nozzle status is represented with the same colors as the boom sections (see below). ***Note –*** *The CFX-750 display cannot automatically turn fence nozzles on or off. It only displays the current status.*
	Application indicator	The wheel on the display spins when the HARDI master switch is on and the booms are on.

Raven controllers

When using the Raven SCS 400 and 600 series controller with the CFX-750 display, note the following:

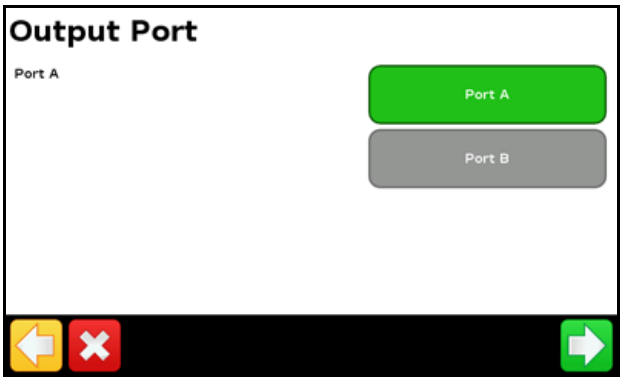
- The CFX-750 display cannot control the status of the Raven controller master or boom switches. This means that the operator must remain in complete control of the sprayer at all times.
- The CFX-750 display cannot automatically turn off the sprayer when going outside headlands, across exclusion zones, or previously sprayed areas.
- The sprayer may not always switch off completely when the CFX-750 sends a zero rate. This means the operator may need to manually turn off the master switch to ensure that spray is not applied.

Note – *The only time the CFX-750 display sends a zero rate is when the sprayer is outside a prescription boundary and the "Rate outside polygon" option is zero.*

- The operator must ensure that the master switch is off when there is no field open so that no spray is accidentally applied to areas that shouldn't be sprayed, for example, roads, paths, and neighboring fields.

Setup

1. Once you select Raven as your controller, the following screen appears on the display:



Note – *Do not configure the display to output NMEA messages on the same port that your controller is connected to.*

2. On the Raven controller, configure the following Data Menu settings:

Item	Setting
Baud or Baud Rate	9600
GPS	Inac
DLOG or Data Log	On
TRIG or Data Log Trigger Value	1
UNITor Data Log Trigger Units	sec

Note – *In the GPS group, if 'Send time', 'Time acknowledge' or 'Close file' appear, change them to GPS Inac. Otherwise, the DLOG or DATA LOG option will not appear.*

For more information on configuring and calibrating the Raven controller, refer to the Raven instruction manual.

Advanced

Use the *Advanced* option in the *Implement* screen to configure the following:

- Boom Setup
- Target Rate
- Rate Snapping

Boom Setup

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Number of sections	Enter a number between 1 - 10.

Target Rate

Set the target application rate that will be sent to the Raven controller. Enter a rate between 0.0 - 11000.0.

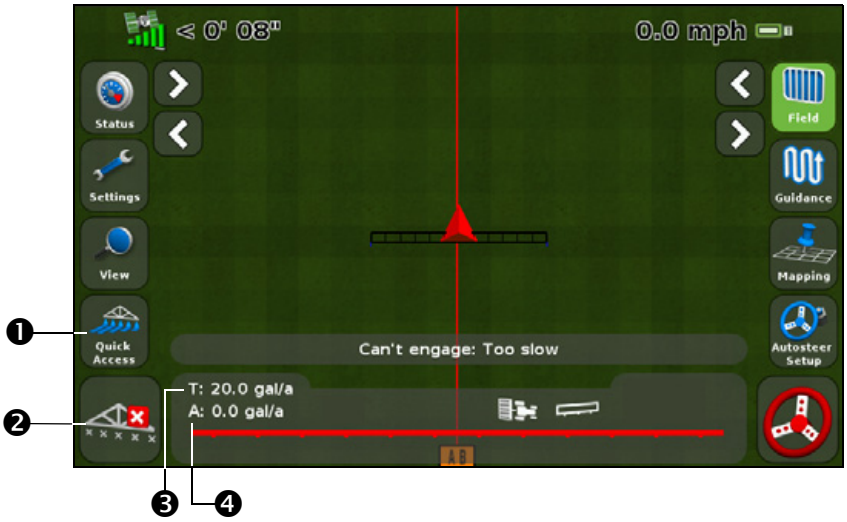
Rate Snapping

Due to pump constraints, liquid flow is generally inconsistent. To control how these inconsistencies appear on your display, turn rate snapping on or off.

Setting ...	Notes ...
On	Matches the applied rate to the target rate when within 10% of the value.
Off	Shows all fluctuations in the actual applied rate.

Operation

When you connect the Raven controller to the CFX-750 display, the following items appear on the guidance screen:



Item	Description	Notes
❶	Quick Access icon	See, Quick Access icon, page 38.
❷	Boom section status indicators	Shows the current state of each boom section: • Green: Enabled and spraying • Gray: Enabled but not currently spraying • Red: The section is off (the switch is off)
❸	Target rate	If a prescription is loaded, P displays to indicate that the prescription rate is being used rather than the target rate.
❹	Actual rate	The actual application rate. This is the amount of product that is currently being applied.
	Application indicator	The wheel on the display spins when the Raven master switch is on and the booms are on.

Target Rate

To manually enter a rate to send to the controller:

1. In the *Settings* screen, tap **Implement** and then **Advanced**:
2. Tap **Target Rate** and then adjust the rate that is sent to the controller.

Automatic Boom Switching

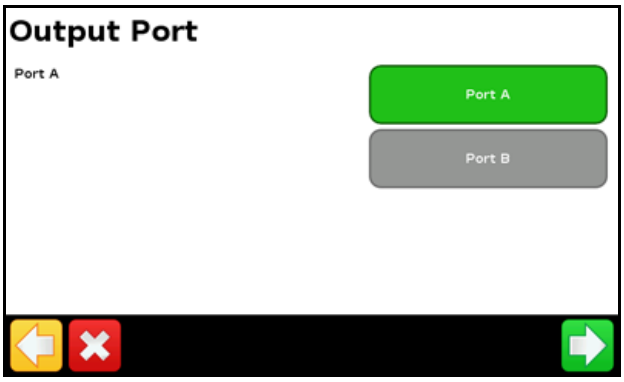
The CFX-750 display will not do automatic boom switching for the Raven controller.

Note – *To ensure that areas outside the headland, in exclusion zones, or previously sprayed areas are not sprayed, you will need to manually turn off the Raven controller master switch.*

Rawson controller

Setup

1. Once you select Rawson as your controller, a warning message appears. Make sure that you read the message carefully, and then tap to continue.
   The *Output Port* screen appears:



2. Change the Output Port to COM or AUX to match the port on the display that the controller is connected to.
3. On the Rawson controller:
   - Verify the default target rate and step size and then enter these values into the CFX-750 display. To learn how to change these settings on the CFX-750 display, see Advanced, below.
   - Set the baud rate to 9600.

To enable the CFX-750 display to change the rates on the controller, you must also set the Rawson controller to GPS mode:

1. Turn the Rawson controller on.
2. Press the MODE button twice.
3. Press the SET button to switch the controller between GPS and non-GPS modes.

Note – *If you do not set the Rawson controller to use GPS mode, the CFX-750 display will only log the rates being used.*

For more information on configuring the Rawson controller, refer to the *ACCU-RATE Controller 9.2A User Guide*.

Advanced

Use the *Advanced* option in the *Implement* screen to configure the following:

- Boom Setup
- Swath Control
- Target Rate
- Default Rate
- Step Size
- Rate Snapping

Boom Setup

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Number of sections	Enter a number between 1 - 10.

Swath Control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Boom control	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

Target Rate

Set the target application rate that will be sent to the Rawson controller. Enter a rate between 0.0 - 11000.0.

Alternatively, you can load a prescription so the CFX-750 display will automatically send target rates to the Rawson controller.

Note – *When the CFX-750 display is sending target rates to the Rawson controller, the Rawson controller will only display the Target Rate screen. To change or view any other screen on the Rawson controller, you must unplug the CFX-750 display cable.*

Note – *When using a prescription with the Rawson controller, the target rates in the prescription must match the step sizes in the Rawson controller. For example, if the default is 25000 and the step size is 4%, then the target rate values accepted by the Rawson controller are 26000, 27000, 28000...40000. Otherwise, the Rawson controller may not be able to apply the correct rate.*

Default Rate

On the CFX-750 display, set the same target rate that appears on the Rawson controller when you first power up it up. Enter a number between 0 - 9999000.

Step Size

The step size increases or decreases the actual applied rate by the percentage that you select. You can choose from one of the following settings:

- 2%
- 4%
- $6\,^{2}/_{3}\%$

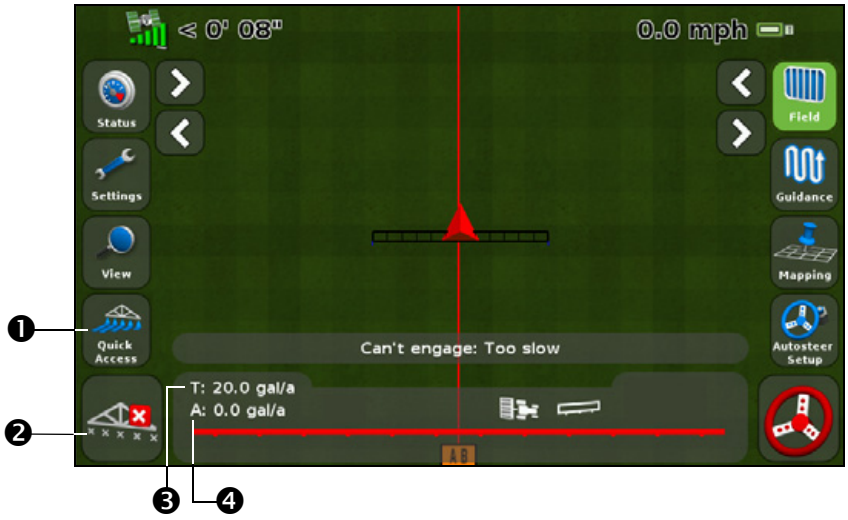
Rate Snapping

Due to pump constraints, liquid flow is generally inconsistent. To control how these inconsistencies appear on your display, turn rate snapping on or off.

Setting ...	Notes ...
On	Matches the actual applied rate to the target rate when within 10% of the value.
Off	Shows all fluctuations in the actual applied rate.

Operation

When you connect the Rawson controller to the display, the following items appear on the CFX-750 guidance screen:

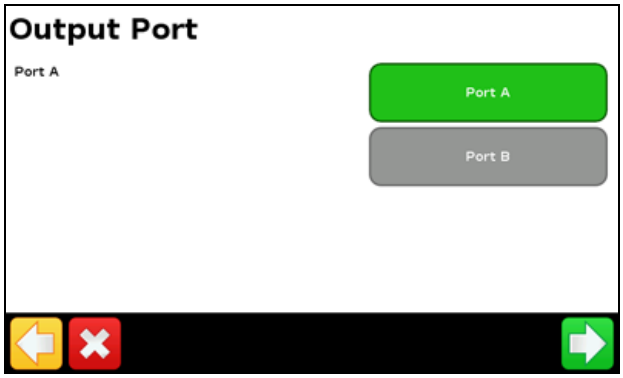


Item	Description	Notes
❶	Quick Access icon	See, Quick Access icon, page 38.
❷	Boom section status indicators	Shows the current state of each boom section: • Green: Enabled and spraying • Gray: Enabled but not currently spraying • Red: The section is off (the switch is off)
❸	Target rate	If a prescription is loaded, P displays to indicate that the prescription rate is being used rather than the target rate.
❹	Actual rate	The actual application rate. This is the amount of product that is currently being applied.
	Application indicator	The wheel on the display spins when the Rawson master switch is on and the lightbar receives flow messages from the controller.

Amazone controller

Setup

1. Once you select Amazone as your controller, the following screen appears on the display:



Note – *Do not configure the display to output NMEA messages on the same port that your controller is connected to.*

2. On the Amazone controller, go to the *Settings* menu.
3. Change Remote to Enable.

For more information on setting up the Amazone controller, refer to the Amazone instruction manual.

Advanced

Use the *Advanced* option in the *Implement* screen to configure the following:

- Boom Setup
- Swath Control
- Rate Control
- Target Rate
- Turn Off Rate on Overlap
- Rate Snapping

Boom Setup

Note – *The boom setup on the CFX-750 display must match the setup on the Amazone controller. If the boom setup differs between the display and the Amazone controller, a warning message appears on the display.*

Use this option to view and adjust the following settings:

Settings ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Fence Nozzles	Enter the locations of any fence nozzles.
Number of sections	Enter a number between 1 - 10.

Swath Control

Use this option to view and adjust the following settings:

Settings ...	Notes ...
Boom control	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

Rate control

Use this option to view and adjust the following settings:

Settings ...	Notes ...
On	Application rates are sent from a prescription loaded in the display or the target rate manually configured on the display.
Off	The target rate must be set on the Amazone controller. The CFX-750 display does not send target rates to the controller. This is the default setting.

Note – *When sending a target rate to the Amazone controller that is higher than 99.9, the display rounds to the nearest whole number. For example, 0-99.9 is not rounded. 101.4 is rounded to 101.*

Target Rate

Set the target application rate that will be sent to the Amazone controller. Enter a rate between 0.0 - 11000.0.

Turn Off Rate on Overlap

Use this option to view and adjust the following settings:

Settings ...	Notes ...
Yes	Does not spray over an area that has been previously sprayed.
No	Sprays over an area that has been previously sprayed.

Operation

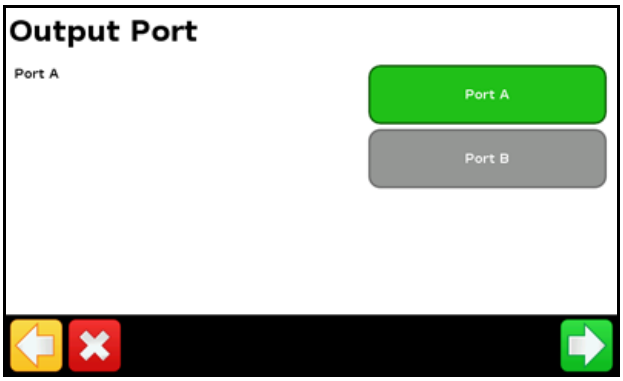
When you connect the Amazone controller to the display, the following items appear on the display's guidance screen:

Item	Notes
Actual rate	
Target rate	If a prescription is loaded, P displays to indicate that the prescription rate is being used rather than the target rate.
Boom section status indicators	Shows the current state of each boom section: • Green: Enabled and spraying • Gray: Enabled but not currently spraying • Red: The section is off (the switch is off)
Application indicator	The wheel on the display spins when the Amazone master switch is on and the lightbar receives flow messages from the controller.
Quick Access icon	See, Quick Access icon, page 38.

LH 5000 controller

Setup

1. Once you select the LH5000 as your controller, the following screen appears on the display:



2. On the CFX-750 display, make sure that Output Port matches the port on the display that the controller is connected to (COM or AUX).

3. Do not configure the display to output NMEA messages on the same port that your controller is connected to.

For more information on configuring the LH 5000 controller, refer to the LH 5000 instruction manual.

Advanced

Use the *Advanced* option in the *Implement* screen to configure the following:

- Boom Setup
- Swath Control
- Rate Control
- Target Rate
- Turn Off Rate on Overlap
- Rate Snapping

Boom Setup

Note – *The boom setup on the CFX-750 display must match the setup on the LH 5000 controller. If the boom setup differs between the display and the LH 5000 controller, a warning message appears on the display.*

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Fence Nozzles	Enter the locations of any fence nozzles.
Number of sections	Enter a number between 1 - 10.

Swath Control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Boom control	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

Rate control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
On	Application rates are sent from a prescription loaded in the display or the target rate manually configured on the display.
Off	The target rate must be set on the LH 5000 controller. The CFX-750 display does not send target rates to the controller. This is the default setting.

Note – *When sending a target rate to the LH 5000 controller that is higher than 99.9, the display rounds to the nearest whole number. For example, 0-99.9 is not rounded. 101.4 is rounded to 101.*

Target Rate

Set the target application rate that will be sent to the LH 5000 controller. Enter a rate between 0.0 - 11000.0.

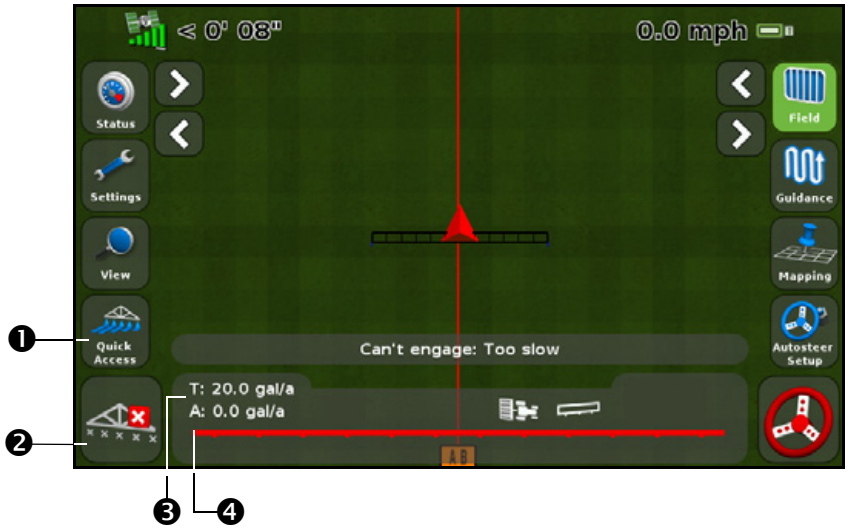
Turn Off Rate on Overlap

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Yes	Does not spray over an area that has been previously sprayed.
No	Sprays over an area that has been previously sprayed.

Operation

When the LH 5000 variable rate controller is connected to the display, the following items appear on the CFX-750 display's guidance screen:

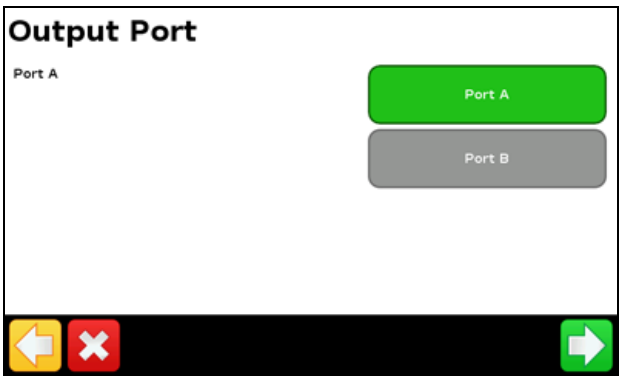


Item	Description	Notes
❶	Quick Access icon	See, Quick Access icon, page 38.
❷	Boom section status indicators	Shows the current state of each boom section: • Green: Enabled and spraying • Gray: Enabled but not currently spraying • Red: The section is off (the switch is off)
❸	Target rate	If a prescription is loaded, P displays to indicate that the prescription rate is being used rather than the target rate.
❹	Actual rate	The actual application rate. This is the amount of product that is currently being applied.
	Application indicator	The wheel on the display spins when the LH 5000 master switch is on and the lightbar receives flow messages from the controller.

Vaderstad

Setup

1. Once you select Amazone as your controller, the following screen appears on the display:



Note – *Do not configure the display to output NMEA messages on the same port that your controller is connected to.*

2. In the Device Type screen, select the type of implement you are using:
   - Sprayer
   - Planter/Seeder
   - Fertilizer/Spreader
3. On the Vaderstad controller, go to the setup screen.
4. Set GPS to No.

Advanced

Use the Advanced option in the Implement screen to configure the following:

- Boom Setup
- Swath Control
- Rate Control
- Target Rate
- Single section boom switching
- Rate Snapping

Boom Setup

Note – *The boom setup on the CFX-750 display must match the setup on the LH 5000 controller. If the boom setup differs between the display and the LH 5000 controller, a warning message appears on the display.*

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Fence Nozzles	Enter the locations of any fence nozzles.
Number of sections	Enter a number between 1 - 10.

Swath Control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Boom control	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

Rate control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
On	Application rates are sent from a prescription loaded in the display or the target rate manually configured on the display.
Off	The target rate must be set on the LH 5000 controller. The CFX-750 display does not send target rates to the controller. This is the default setting.

Note – *When sending a target rate to the LH 5000 controller that is higher than 99.9, the display rounds to the nearest whole number. For example, 0-99.9 is not rounded. 101.4 is rounded to 101.*

Target Rate

Set the target application rate that will be sent to the LH 5000 controller. Enter a rate between 0.0 - 11000.0.

Single section boom switching

Use this to turn off the implement in areas that have already been applied.

Note – *This setting can only turn the entire boom on and off. It does not support individual sections.*

- Select Yes to avoid spraying an area that has previously been sprayed.
- Select No to spray an area that has previously been sprayed.

Rate Snapping

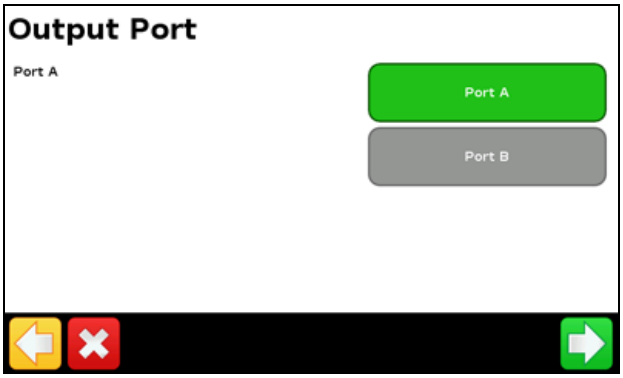
Due to pump constraints, liquid flow is generally inconsistent. To control how these inconsistencies appear on your display, turn rate snapping on or off.

Value ...	Notes ...
On	Matches the applied rate to the target rate when within 10% of the value.
Off	Shows all fluctuations in the actual applied rate.

Bogballe controller

Setup

1. Once you select Bogballe as your controller, the following screen appears on the display:



Note – *Do not configure the display to output NMEA messages on the same port that your controller is connected to.*

2. On the Bogballe controller, press Return / Return / Fertil.-Distrib / Select Type / Bogballe E/EX / Accept

For more information on setting up the Amazone controller, refer to the Amazone instruction manual.

Advanced

Use the Advanced option in the Implement screen to configure the following:

- Boom Setup
- Swath Control
- Rate Control
- Target Rate
- Single Section Boom Switching

Boom Setup

Note – *The boom setup on the CFX-750 display must match the setup on the LH 5000 controller. If the boom setup differs between the display and the LH 5000 controller, a warning message appears on the display.*

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Implement width	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Fence Nozzles	Enter the locations of any fence nozzles.
Number of sections	Enter a number between 1 - 10.

Swath Control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
Boom control	Enter a width between 1' 00" - 328' 01" (0.30 - 99.99 m).
Coverage switching overlap	Control the amount of boom switching overlap allowed before the section will be switched by the system. Enter a value between 1 - 99%.
Boundary switching overlap	Control the amount of overlap on a boundary before the boom section is switched off. Enter a value between 1 - 99%.
On/Off valve latency	Tune the section switching to allow for hardware delays. Enter a time between 0.0 - 10.0 seconds.
Intentional overlap	Set a distance to be overlapped when moving to an unsprayed area or out of a sprayed area. Enter a distance between 0' 00" - 32' 10" (0.00 - 10.00 m).

Rate control

Use this option to view and adjust the following settings:

Setting ...	Notes ...
On	Application rates are sent from a prescription loaded in the display or the target rate manually configured on the display.
Off	The target rate must be set on the LH 5000 controller. The CFX-750 display does not send target rates to the controller. This is the default setting.

Note – *When sending a target rate to the LH 5000 controller that is higher than 99.9, the display rounds to the nearest whole number. For example, 0-99.9 is not rounded. 101.4 is rounded to 101.*

Target Rate

Set the target application rate that will be sent to the LH 5000 controller. Enter a rate between 0.0 - 11000.0.

Single section boom switching

Use this to turn off the implement in areas that have already been applied.

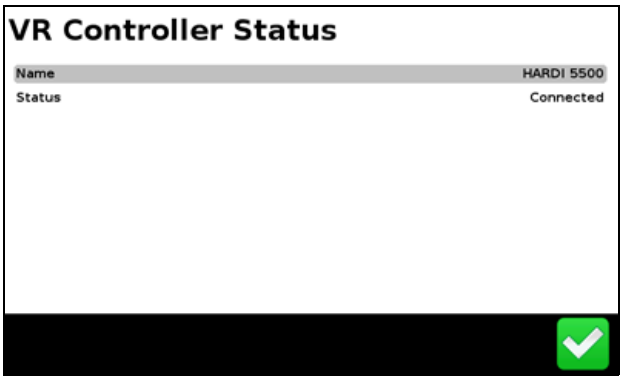
Note – *This setting can only turn the entire boom on and off. It does not support individual sections.*

- Select Yes to avoid spraying an area that has previously been sprayed.
- Select No to spray an area that has previously been sprayed.

Checking the implement connection

To check that the CFX-750 display and your implement controller are communicating correctly, access the *VR Controller Status* screen:

1. In the *Settings* screen, tap **Vehicle** and then tap **Status**.
2. Tap **VR Controller Status**. A screen similar to the following appears:



3. Check that the status displays *Connected*.

Note – *If the status displays Not Connected, verify that the controller cable is securely connected to the display. If the cable is secure, verify that the display and the controller are configured correctly, as detailed in the sections above.*

CHAPTER

6

Mapping and Guidance

In this chapter:

- Introduction
- Configuring the Guidance settings
- Starting Guidance
- Fields
- Resetting guidance
- Guidance lines
- Guidance Patterns
- Coverage logging
- The pause / resume function
- Curve smoothing

This chapter describes the type of guidance information that the CFX-750 display provides.

Introduction

While you work, guidance information appears on the CFX-750 display screen and the integrated lightbar that indicate the:

- position of your vehicle in the field
- guidance lines
- offline distance

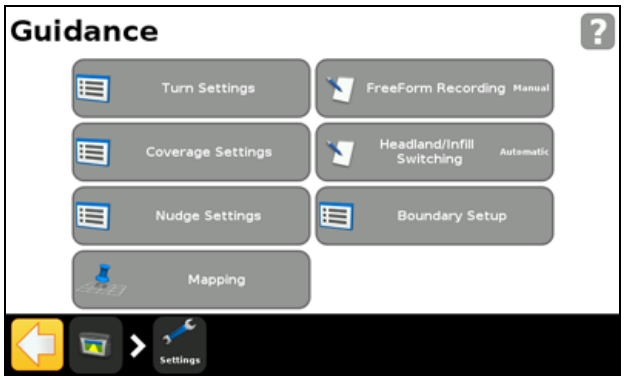
To receive this guidance information (and any assistance from an auto steer system) you must do the following:

1. Configure how the guidance displays on your screen. See Configuring the Guidance settings, below.
2. Set a guidance line. See Guidance lines, page 112.
3. Configure the lightbar. See Lightbar Setup, page 142.

Configuring the Guidance settings

To configure your Guidance settings:

1. From the guidance screen, tap .
2. From the *Settings* screen, tap **Guidance**.



3. Select the options that you would like to configure.

Option	To learn more, see ...
Turn Settings	page 105
Coverage Settings	page 105
Nudge Settings	page 106
Mapping	page 106
FreeForm Recording	page 107
Headland/Infill Switching	page 107
Boundary Setup	page 107

Turn Settings

The available Turn Settings are described below.

Minimum turn radius mode

This setting smoothes corners on curved AB lines, which optimizes the accuracy of your auto steer system when steering curves.

Use this mode ...	To ...
Automatic (This is the default mode.)	Set the radius to 80% of the swath width or 32.8' (10 m), whichever is larger.
Disabled	No attempt is made to keep the corners above a minimum turn radius. ***Note –*** *If you use this mode, curves may be very tight and the auto steering system may be unable to successfully complete the turn.*
Manual	Manually choose the minimum radius.

Tight turn alert threshold

The CFX-750 display alerts you when your machine is within a specified distance of a tight turn.

The threshold is set between 1 and 10. To increase the sensitivity of the alert, lower the number.

Auto U-turn detection

Auto U-turn detection operates only on FreeForm and adaptive curve patterns. For more information, see Guidance Patterns, page 113.

Use this mode ...	To ...
On	Automatically detect that the vehicle has done a U-turn and generate the next guidance line.
Off	Manually control when a path is finished. With the FreeForm pattern you must manually stop recording. With the adaptive curve pattern you must manually set the B point.

Coverage Settings

Configure the *Coverage Settings* options to suit the requirements of your system.

Coverage on/off delay

If you activate coverage logging at the same time as you enable your spraying or spreading system, set a coverage delay that matches the time it takes for flow to start when you turn on your spraying/spreading system. This ensures that the display records coverage from the actual start point of application. You can enter a delay time between 0.0 - 10.0 seconds.

Coverage logging

Use this mode ...	To ...
Disabled	Turn coverage logging off.
Manual	Turn coverage logging on and off manually.
Engaged	Automatically enable coverage logging when the auto steer system is engaged.
Switch	Use a remote switch to turn coverage logging on or off.

Nudge Settings

Option	Description
Clear nudge at swath end	When enabled, the display clears the nudged position each time you change swaths.
Reset nudge	When enabled, any applied nudge is cleared and all swaths return to their original positions.
Nudge increment	Each nudge moves the guidance line by this value. The default nudge increment is 0' 1" (2.5 cm). Enter a value between 2 - 12" (3 - 30 cm).

Mapping

Use this setting to set warning distance and recording positions for the following features:

- Point
- Line
- Area

Warning distance

You can set a warning distance so that the CFX-750 display alerts you when your machine approaches a feature.

As the machine moves to within the specified distance, a warning screen appears on the display. If you have an EZ-Steer or Autopilot system with a sonalert connected, an audible alarm also sounds.

You can set the warning distance to between 0'00" - 984' 03" (0.0 - 300.0 m).

Recording position

Choose the point at which a feature is recorded. When your vehicle is at this point, the feature will be recorded.

Delete features

Use this function to delete point, line and area features from a selected field. Note that this function deletes only the features, not the field itself.

FreeForm Recording

Use this setting to choose how the display records a FreeForm pattern:

Select this mode ...	To ...
Manual	Use the icons on the guidance screen to control when the path is recorded. To start recording tap , to stop, tap .
Record with coverage	Automatically begin and end recording the FreeFrom pattern when coverage logging begins and ends. ***Note –*** *You can still use the FreeForm recording icon to manually override recording.*

Headland/Infill Switching

Use this setting to choose how guidance switches between the headland and the infill part of the field:

Select this mode ...	To ...
Automatic	Automatically switch from headland to infill when the vehicle moves inside the inner headland boundary.
Manual	Use the icons on the guidance screen to select when guidance switches from headland to infill.

Boundary setup

Use the Boundary Setup option to configure:

- when boundaries are active. See Boundaries, below.
- how the display records boundaries. See Expand Boundaries, below.

Note the following:

- When you record a boundary, the display automatically calculates the area of the boundary and displays this information on the Status tab.
- When you load a field that contains a boundary, the boundary also loads.
- You can record multiple boundaries in a single field.
- If your variable rate controller has section switching capability, a boundary acts as a switching barrier. When you move outside the boundary, the controller will automatically switch off the implement.

Boundaries

Select this mode ...	To ...
Enabled	Use existing boundaries and create new ones for all your fields.
Disabled for this field	Turn off boundaries for only the current field you are working in. When you begin your next field, the option will automatically change to Enabled.
Disabled for all fields	Turn off boundaries for all fields you work in, including boundaries made with headland patterns.

Expand Boundaries

Use this setting to determine how the display manages the boundary after you finish recording.

If you select this mode ...	The boundary will ...
Do not expand	Not alter once you have finished recording
Half swath width	Expand by one half swath width toward the outside of the pass
One swath width	Expand by one full swath width toward the outside of the pass

Starting Guidance

Before you can use the display for guidance, you must configure your implement:

1. From the guidance screen, tap and then tap **Create New Field**.
2. In the *Create New Field* screen, tap **Implement Setup**.
3. Edit the settings for each option. For more information, see Implement Setup options, page 108.
4. Select a pattern type (see Guidance Patterns, page 113) and continue through the wizard.

Implement Setup options

For optimum guidance, make sure that you enter accurate information for the implement that is attached to the vehicle. Incorrect information may result in gaps and overlaps in coverage.

The following table describes each of the Implement Setup options:

Option	Enter a measurement between ...	This adjusts guidance and coverage logging when ...	Notes
Implement Width	1' 00" - 328' 01" (0.305 - 99.990 m)		
Overlap/Skip	394" skip and 394" overlap (1000 cm).		To avoid skips in application coverage, set an intentional overlap.

Option	Enter a measurement between ...	This adjusts guidance and coverage logging when ...	Notes
Left/Right Offset	1969" right and 1969" left (5000 cm).	The implement if offset from the vehicle center line.	When configured and online, the implement should be over the guidance line, with the vehicle to the side. For guidance when driving, use the LEDs on the lightbar. For more information, see Reading lightbar patterns, page 41.
Forward/Back Offset	1188" behind and 384" forward (3018 cm - 975 cm)	The implement is not centered directly under the GPS antenna (for EZ-Steer systems) or the fixed axle of the vehicle (for Autopilot systems).	Set a Forward Offset when the implement is forward of the antenna (on the front of the vehicle) for EZ-Steer systems, or forward of the fixed axle of the vehicle for Autopilot systems. Set a Back Offset when the implement is behind the antenna (on the back of the vehicle) for EZ-Steer systems, or behind the fixed axle of the vehicle for Autopilot systems.
Implement Draft	393.7" left and 393.7" right (1000.0 cm).	There is a variable implement draft caused by a side slope and/or an implement pulling to one side.	
Implement Mount Type			Choose the type of implement mount that is in use

Using guidance on curved segments

After you have defined a guidance line, there are two ways to get guidance:

- Drive the vehicle through a tight U-turn. The next guidance line appears.
- If you are manually logging a FreeForm curve, tap to stop defining the current line.

The FreeForm curve is similar to an adaptive curve. You must record your line on each pass to receive guidance on the next. If the vehicle is not drawing a line (or guidance trail) behind it, you are not recording your path and therefore the next guidance line will not appear.

Note – *Do not confuse the existing guidance line with the guidance trail appearing behind the vehicle that shows your current guidance. You need to create a new guidance line to receive guidance on the next pass.*

Using guidance on straight segments

When driving on straight AB lines, you do not have to record your path because the guidance lines are generated automatically.

Creating straight sections on Headland or Curve swaths

To create straight sections when recording headland or curve swaths:

1. Tap .
2. Drive the section.
3. Tap to finish recording the straight section and to start recording a curve again.

Fields

A "field" is specific area of land where events (such as planting seed or applying fertilizer) are carried out.

You create your first field when you first configure your implement (see Starting Guidance, page 108). That field remains open until you do one of the following:

- Create a new field, or load a previously saved field
- Calibrate your EZ-Steer system
- Perform a hard reset

Note – *Fields are stored automatically. You do not have to actively save a field.*

The following sections describe how to use the field function when there is already a field currently loaded on the display.

Creating a new field

1. In the guidance view tap . The *Finished with Field* screen appears.
2. Tap **Yes**.
3. In the *Create New or Select Old Field* screen, tap **Create New Field.**
4. To setup the new field, progress through the wizard.
5. Follow the on screen instructions to drive your new line. For more information, see Mapping an AB line, page 114.

Selecting (loading) a field

1. In the guidance view tap . The *Finished with Field* screen appears.
2. In the *Finished with Field* screen tap **Yes**.
3. In the *Create New or Select Old Field* screen, tap **Select Field by Name**.
4. In the *Select Field by Name* screen, select the field you wish to load.
5. To setup the field, progress through the wizard.

Adding an AB line to a current field

To create a new AB line in a current field:

1. In the guidance view tap . The *Finished with Field* screen appears.
2. In the *Finished with Field* screen tap **No**.
3. In the *Create New or Select Old Swath* screen, tap **Add AB Line**.
4. To setup the new field, progress through the wizard.
5. Follow the on screen instructions to drive your new line. (For more information, see Mapping an AB line, page 114).

Selecting (loading) an AB line into a field

1. In the guidance view tap . The *Finished with Field* screen appears.
2. In the *Finished with Field* screen tap **No**.
3. In the *Create New or Select Old Swath* screen, tap **Select Old**.
4. To setup the new field, progress through the wizard.
5. Follow the on screen instructions to drive your new line. For more information, see Mapping an AB line, page 114.

Record keeping

Optionally, you can record operational and environmental information about each field that you create, including:

- Operator
- Farm location
- Application method
- Wind direction
- Temperature
- Target pests
- EPA license number
- Vehicle
- Wind speed
- Sky conditions
- Humidity
- Applied material
- Harvest year
- Implement
- Wind gust speed
- Soil conditions
- Crop

Additionally, there are four custom fields where you can enter your own values.

To learn how to use this information, see Chapter 8, Data.

Resetting guidance

To reset guidance, in the guidance view, tap . The *Finished with Field* screen appears:

To map a new:

- ***field*** or select an existing field, select *Yes*.
- ***AB line*** or select an existing AB line in the current field, select *No*.

Note – *If you select 'Yes', then the current field automatically closes. This means that you cannot cancel out of the New Field wizard and go back to your current field.*

Guidance lines

To create a guidance line, you define a start point (A) and an end point (B). Once you define the A and B points, the display draws a line between them. This is the master AB line.

Note – *AB lines are stored automatically. You do not have to actively save an AB line.*

When you define the first guidance line, the display copies it to create additional guidance lines.

Distance between guidance lines

When you define the AB line, you specify the width of the implement that is attached to the vehicle. The display uses this measurement to calculate the distance between the guidance lines. If you do not want the guidance lines to be exactly one implement width apart, you can set an overlap or skip.

Headlands

You can record a headland boundary, or you can work without a headland.

On screen appearance

When the guidance screen shows the trailing view, it tags the guidance lines with the following icons:

These icon/s	Are tagged to ...
	The master line that you created. The swaths are based on this line.
	The A (start) and B (end) point on the master line.
	The first swath to the left of the master line, where 'left' is relative to the direction the master line was drawn, not the vehicle's current position. Note the following: • The current swath and tag are orange. • On a Pivot pattern, the swaths are numbered out from the center, not from the initial swath.
	The second line to the left of the master line.

Guidance Patterns

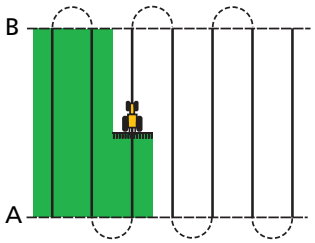
Select a guidance pattern that enables you to create a guidance line to suit your field:

1. From the guidance screen, tap and then tap **Create New Field**.
2. In the *Create New Field* screen, tap **Pattern Type.**
3. Select the pattern that you want to use:

Pattern	To learn more, see ...
Straight AB	page 114
A+ line	page 114
Identical curve	page 115
Adaptive curve	page 115
Pivot	page 116
Headland	page 116
FreeForm	page 118

Straight AB

Use a straight AB line when you do not need to define headlands and you want to drive the field in parallel straight lines.



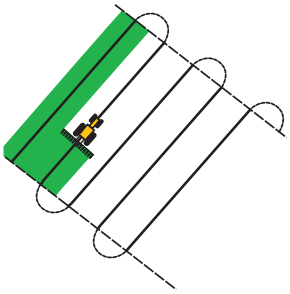
Note – *When the vehicle is on a guidance line, the line extends 1 km (0.6 miles) before point A and 1 km beyond point B. This makes it easier to see where the next swath is and to get online after a turn.*

Mapping an AB line

1. Drive to the start point of the master line.
2. Tap and then drive to the end of the line.
3. When the icon is highlighted, tap . The master AB line appears.
4. Turn left or right for the next swath. As you move toward the next swath, it appears on the screen and turns orange to show that it is selected.

A+ line

An A+ line is a straight line, defined by a single A point on the line and the heading of the line. When you create an A+ line, you must enter a heading in the *A+ Heading* screen. By default, the A+ heading is the same as the previous AB line.



An A+ line is useful when you need guidance exactly parallel to the last AB line, for example when:

- driving adjacent fields
- mapping the AB line on a road down the side of the field
- skipping an access road in a field

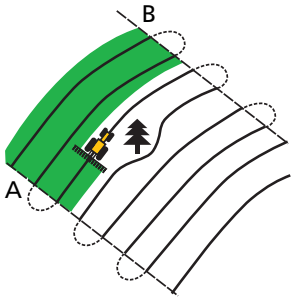
The A+ line extends 1 km (0.6 miles) before and after the A point.

Mapping an A+ line

1. Drive to the start point of the master line.
2. Tap and then drive to the end of the line.
   Because you have already set the line heading, the master AB line appears on the screen.
3. For guidance down the first swath follow the AB line.
4. Turn left or right for the next swath. As you move toward the next swath, it appears on the screen and turns orange to show that it is selected.

Identical curve

The identical curve pattern records your exact route between the A and B points, instead of creating a straight line. All subsequent guidance lines will match the master curve, regardless of where you drive the vehicle.



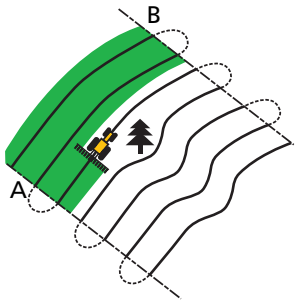
Use the identical curve pattern when you want to work a field with gentle curves.

Mapping an identical curve

1. Drive to the start point of the curve.
2. Tap A and then drive the initial curve.
3. When the icon is highlighted, tap B. The master curve appears on the screen.
4. Turn left or right for the next swath. As you move toward the next swath, it appears on the screen and turns orange to show that it is selected.

Adaptive curve

The adaptive curve pattern provides guidance along a curve and updates guidance after each swath to take into account any deviations you make. It continually records your path and provides guidance that matches the last path you drove.



Mapping an adaptive curve

You can map an adaptive curve either manually or automatically. The method you use depends on the Auto U-turn detection setting.

To change the Auto U-turn detection setting:

1. In the *Settings* screen, tap **Guidance**.
2. Tap **Turn Settings**, then **Auto U-Turn Detection**.
3. If you want to map the adaptive curve:
   - Automatically; select *On*.
   - Manually; select *Off*.

To map an adaptive curve with automatic turn detection:

1. Drive to the start point of the curve.
2. Tap A and then drive the initial curve.
3. At the end of the first curve, perform a U-turn. The system detects the turn and generates the next swath.

To map an adaptive curve manually:

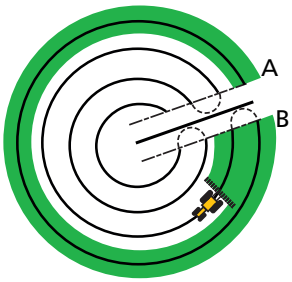
1. Drive to the start point of the curve.
2. Tap A and then drive the initial curve.
3. At the end of the first curve, tap B. The system generates the next swath.
4. Continue to drive the swaths, setting the B point at the end of each one.

Using the adaptive curve pattern for row-finding

1. Set *Auto U-Turn Detection* to *Off*.
2. Create a guidance line based on the adaptive curve pattern.
3. Set the B point at the end of each row.
4. Turn the vehicle toward the next swath. When the vehicle is halfway through the turn, guidance along the next swath appears.

Pivot

Use the pivot pattern on fields that use center-pivot irrigation. With this pattern you can drive concentric circles around the center-pivot.



To map a pivot:

Note – *Always set the master line near the outer edge of the field.*

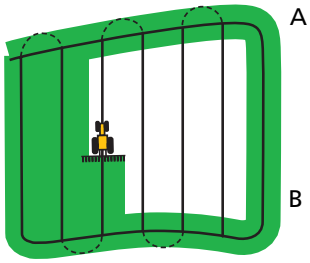
1. Drive to the start point of the pivot.
2. Position one wheel of the vehicle in a pivot wheel rut, with the rear of the vehicle to the pivot arm. If the field is not a full circle pivot, face the rear of the vehicle to the edge of the field.
3. Tap A and then drive around the field. Keep the vehicle in the rut. The display will generate guidance swaths.
4. Turn left or right for the next swath. As you move toward the next swath, it appears on the screen and turns orange to show that it is selected.
5. Steer the vehicle so that the lit LEDs are centered on the lightbar as you drive forward along the swath.

Headland

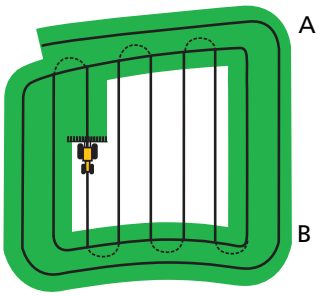
The headland pattern enables you to define the boundary (headland) of the area, as well as the guidance lines contained within it. Use the headland pattern to allow room to turn.

The following diagrams show the two headland patterns:

Single



Multiple



When you start to define the headland, you define the internal guidance line as you drive around the headland, and then you complete the headland.

You can change two settings for the headland pattern:

- The number of circuits.
- The internal pattern.

Number of circuits

When you create a headland, you need to specify the total number of circuits (including the master headland). This defines how wide the headland is.

Note – *No matter how many circuits you create, only define the outside headland. The inner headlands are copied from that original circuit.*

Internal pattern

The internal pattern is the pattern of the guidance lines inside the headland. Choose from the following:

Choose this pattern ...	To create ...
Straight AB	Standard parallel swaths inside a headland
A+	Parallel swaths at a pre-defined heading

Reselecting the headland

When you use the headland pattern you can see either the headland or the internal pattern.

To see the headland guidance again when you are driving the internal pattern, drive into the headland before the first internal swath or after the final internal swath. The headland appears automatically.

Mapping a headland

1. Drive to the start point of the headland.
2. Tap to set the start point of the headland.

3. Begin to drive the circuit of the headland.

Note – *To ensure straight sides on the headland, you can use the pause feature. See* *Creating straight sections on Headland or Curve swaths, page 110*.

4. Tap to set the A point of your guidance line. If the internal pattern is an:
   - A+ line, the line is set.
   - an AB Line, continue to drive around the headland. When you reach the other end of the internal guidance line, tap to set the B point.

   When you have defined the internal pattern guidance line, the start-point circle appears around the start point of the headland.

Note – *If you return to the start of the headland before you define a guidance line, the headland will not complete.*

5. To complete the headland, do one of the following:

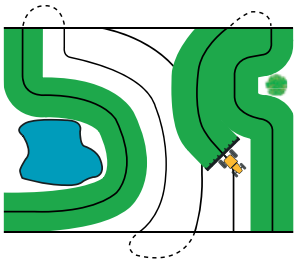
Note – *Define the master line for the internal pattern before you complete the headland.*

   - Drive around the rest of the headland until you return to the start-point circle. When you drive into the start-point circle, the headland completes automatically.
   - Drive part of the headland and then tap . The headland completes with a straight line from the vehicle position back to the start point.

   Once you have completed the headland, the headland guidance line appears.

When the vehicle moves out of the headland and into the interior of the pattern, the interior is populated with your selected the guidance line pattern (straight AB or A+).

FreeForm



Use this pattern type to create curved and straight lines for guidance in fields of any shape.

The display records the exact path you drive, and uses this to generate the next guidance line.

To select the FreeForm recording option:

1. In the *Settings* screen, tap **Guidance** and then **FreeForm Recording**.
2. Tap **Manual** or **Record with coverage**.

Recording a FreeForm curve

1. Drive to the start point of the FreeForm curve.
2. To:
   - use ***Manual*** recording, tap .
   - ***Record with Coverage*** tap either or .

While the display is recording the current path, appears on the guidance screen.

3. Drive the curve. To record straight sections, you can use the pause feature. *See Creating straight sections on Headland or Curve swaths, page 110*
4. To finish recording, do one of the following:
   - If Auto U-Turn Detection is on, perform a tight U-turn.
   - For ***Manual*** recording, tap .
   - If you are using ***Record with Coverage***, tap or .

Note – *If Auto U-Turn Detection option is off, you must manually stop recording at the end of each pass and then start recording again at the beginning of the next pass.*

Using the FreeForm pattern to define a straight AB line

1. Tap and then drive to the end of the line.
2. At the end of the line, tap .

Switching to another line

To switch from the current FreeForm guidance line to another, tap .

The first time you tap the icon, guidance snaps to the next nearest curve. Continue tapping the icon to cycle through other guidance lines.

Note – *To use this feature, the vehicle must be within 1.5 swath widths of a FreeForm curve.*

Using FreeForm curves in spiral fields

If you are creating a spiral into the center of the field, drive the full circuit and then back onto the start of the FreeForm curve. Continue to record your guidance path as you spiral toward the center of the field.

If you encounter an obstacle in the field, continue to record your path as you drive around it. On the next pass the guidance line will adjust to reflect this.

Note – *When you create a spiral with the FreeForm guidance pattern, there may be a space at the center of the spiral.*

Using FreeForm curves in fields with variable terrain

Start and stop recording guidance at the ends of each pass. If there are two guidance lines in close proximity, tap to snap to the correct line.

At any point you can add a straight AB line for repeated straight line guidance. Tap to switch between straight AB and FreeForm curve guidance lines.

Coverage logging

Coverage logging draws a solid block of color behind the vehicle to show the area that you have applied. When you pass over an area for the second time, the color of the covered area changes. This is useful for viewing overlaps.

To begin coverage logging tap while you are driving; to finish coverage logging tap .

Note – *There may be a delay between the time you start or stop coverage logging onscreen and the time the implement actually starts or stops coverage. To compensate for this you can add a time delay to the drawing of coverage logging. See* *Coverage on/off delay, page 105*.

Note – *Field coverage is limited to 1000 acres for each event.*

The pause / resume function

When you tap Pause , an icon appears on the screen to show your exact location when the guidance was paused. This enables you to return to that position in the field.

When you pause guidance:

- Your current position relative to the pause icon appears in the status bar at the top of the screen.
- The guidance line that you were on is displayed, even if you drive onto another swath.
- The pause/resume icon remembers the vehicle position even when the lightbar is turned off.

Curve smoothing

By default, the CFX-750 display smooths curves for improved guidance and auto steering. You can disable curve smoothing on tight turns (curves that have a radius of less than 3m (10 ft.).

Note – *If you disable curve smoothing, the CFX-750 display or the Autopilot system may not be able to auto steer around the tighter turns. Be careful when you disable curve smoothing.*

To disable curve smoothing:

1. In the *Settings* screen, tap **Guidance** and then tap **Turn Settings**.
2. Tap **Minimum Turn Radius Mode** and then select **Automatic**, **Disabled** or **Manual**.

CHAPTER

7

GPS

In this chapter:

- Introduction
- GPS Setup
- Position Quality
- Advanced
- Status

This chapter describes how to set up the GPS receiver.

Introduction

The *GPS* menu enables you to select which GPS system and correction source to use, and the GPS quality tolerance.

To access the menu:

1. From the guidance screen, tap .
2. From the *Settings* screen, tap **GPS**:

GPS Setup

Use the *GPS Correction Source* screen to choose the type of GPS position corrections that you want to use:

Source	Description
SBAS (Satellite-based augmentation system)	Free satellite-based corrections: • WAAS (Wide Area Augmentation System) in North America • EGNOS (European Geostationary Navigation Overlay Service) in Europe
OmniSTAR VBS	Satellite-based subscription correction service
OmniSTAR XP/HP	High accuracy satellite -based subscription correction service
RTK (Real Time Kinematic)	Radio-broadcast corrections from a ground-based reference station
Uncorrected	No GPS corrections

Position Quality

GPS signals can be disrupted by foliage, or when the machine moves out of sight of one or more satellites, or when one or more satellites move out of sight of the machine or 'set' below the horizon.

The *Position Quality* screen provides options that allow you to operate when the quality of GPS position information is compromised.

Option	Description
Favor Accuracy	Provides the highest level of accuracy.
Balanced Quality	Trades potential accuracy for a slight increase in production time.
Favor Availability	Extends production time further, with more potential for reduced accuracy.

Advanced

The *Advanced* screen enables you to view and adjust advanced GPS settings.

Antenna Type

Access the *Antenna Type* screen to alter the internal settings of the GPS receiver to ensure optimum accuracy for the antenna.

Select the antenna you have connected to the display. The AG15 and AG25 antennas are white and dome shaped.

Use SBAS satellites in the position fix

Choose this option if you want to use SBAS corrections from WAAS satellites to calculate the GPS positions. For example, if the display receives position information from six standard GPS satellites and two WAAS satellites, the display uses all eight satellites to calculate the GPS position.

This can extend operating time when limited number of satellites are available.

Note – *This option does not work with EGNOS satellites, OmniSTAR or RTK corrections.*

Force GPS Iono

Choose *On* to force the use of modeled rather than real-time ionosphere data.

This setting is designed primarily for locations at the edge of SBAS coverage, such as northern Canada, and could affect accuracy if used elsewhere.

OnPath Filter

Use the *OnPath Filter* option to detect and eliminate GPS position jumps and significantly improve pass-to-pass accuracy. Select the option that best describes the surrounding environment.

Satellite Health

You can use this setting to disregard signals from a specific satellite due to concerns about its state. For more information, contact your reseller.

Status

The *Status* screen enables you to view the current status of the GPS functions.

GPS Status

The *GPS Status* screen displays information about your position and the current GPS signal strength.

Satellite Status

The *Satellite Status* screen displays information about the current satellite constellation.

The information for each satellite is contained in one line. The following table describes fields that the line contains:

Field	Description
Sv	Satellite number ***Note –*** *GLONASS satellites have an "R" in front of the satellite number; GPS satellites do not.*
El	Elevation
Az	Azimuth
L1	L1 SNR
L2	L2 SNR
Corr	Correction (Only appears if correction is applied)
Used	Used (Only appears if the satellite is used in position calculation)

DGPS Status

The *DGPS Status* screen displays which DGPS signal is selected from the GPS Correction Source screen. For more information, see GPS Setup, page 122.

Filter Status

The *Filter Status* screen provides diagnostic information about the OnPath® advanced filter technology.

CHAPTER

8

Data

In this chapter:

- Introduction
- Connected Farm Setup
- Manage Data

The CFX-750 display saves field data to the display's internal memory. You can transfer this data to your home or office computer through a USB drive, or wirelessly through the Connected Farm server.

This chapter describes how to manage the data generated by the CFX-750 display.

Introduction

Use the options in the *Data* menu to:

- Save and retrieve fields from the USB drive.
- Send fields (via Connected Farm) to your home or office PC.
- Delete fields and coverage logging.
- Export diagnostic log files to the USB drive for technical support purposes.
- Copy prescriptions from the USB drive to the internal memory and delete from the internal memory.

To access the *Data* menu:

1. From the guidance screen, tap .
2. From the *Settings* screen, select *Data*. The following screen appears:

DCM-300 modem

This section describes how to set up a DCM-300 modem for use with VRS corrections.

Passcodes

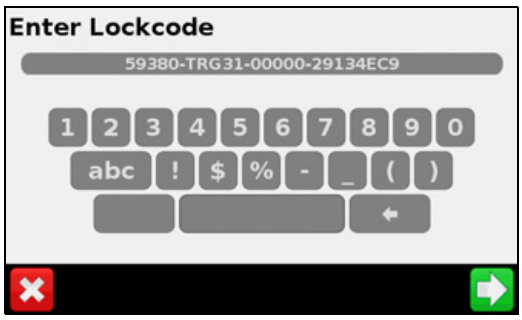
The DCM-300 modem requires a passcode ***upgrade*** to use VRS and Connected Farm functions.

VRS and Sync File Transfer functions in the DCM-300 modem must be ***unlocked*** to begin using VRS corrections or transferring data.

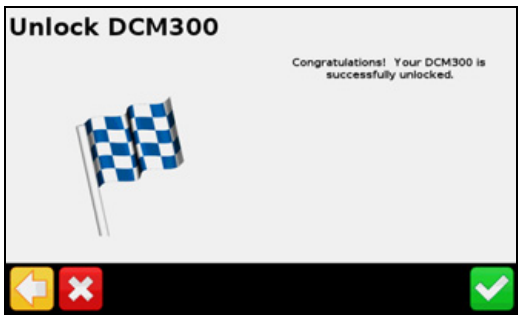
To unlock the modem with a passcode:

1. Turn on the modem and then connect it to the display's USB port.
2. Select the Wrench icon and then select *System / Unlock/Upgrade*.

3. Enter the passcode. When prompted, select **Yes** to restart the modem.

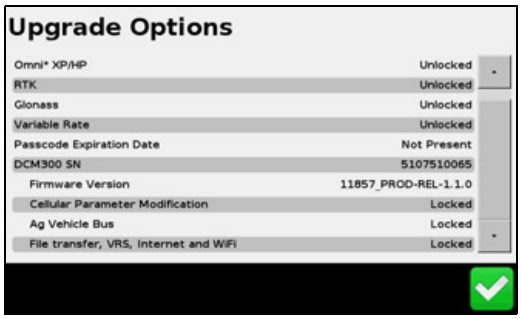


The DCM-300 modem will be ready to use after approximately three minutes.



To view the status of the modem unlocks, select the Wrench icon and then select *System / Status / Upgrade Options*.

To use VRS corrections, you must unlock the File Transfer, VRS, Internet, and WiFi options.

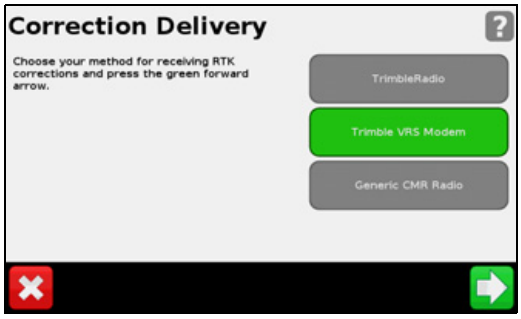


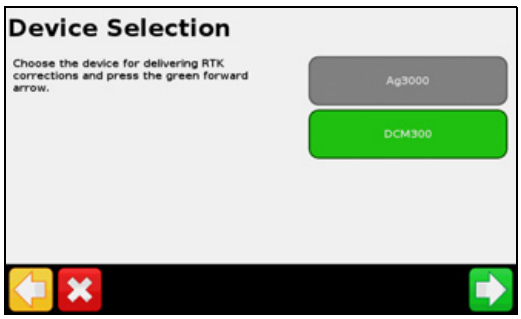
DCM-300 upgrade option	Description
Cellular Parameter Modification	Needed for DCM-300G modem when the customer supplies their own SIM card
Ag Vehicle Bus	Future functionality
File Transfer, VRS, Internet, and WiFi	Required for the use of VRS or Connected Farm Sync functions

Configuring the display for VRS corrections

Note – *The display must be unlocked for RTK to use the Trimble VRS correction type.*

1. To access the GPS Setup screens, select the Wrench icon and then select GPS / GPS Setup / GPS Correction Source / RTK.
2. Select the option for Trimble VRS Modem and then select Continue.
3. From the device selection list, select the required Trimble modem option.


Correction Delivery
Choose your method for receiving RTK corrections and press the green forward arrow.
TrimbleRadio
Trimble VRS Modem
Generic CMR Radio

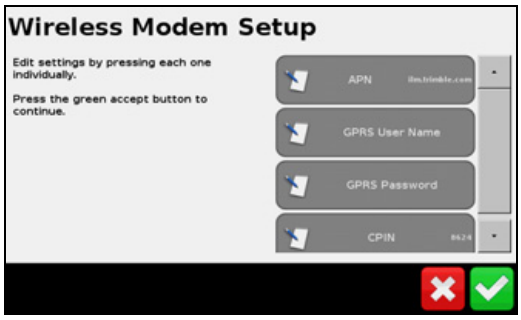


Configuring VRS settings

1. Connect the modem and turn it on.
2. Select the required Trimble modem and then follow the on-screen instructions.

   The first step in the VRS setup wizard is Wireless Modem Setup. This is required only for Trimble modems where you have installed a SIM card.

Wireless Modem settings are as follows. The SIM card provider is responsible for providing any settings required.

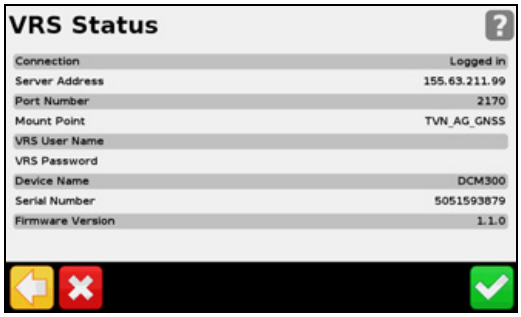


Wireless modem settings	Description
APN	Mobile Network Access Point Name, usually required by the network
GPRS User Name	Mobile Network User name, optional setting – check with your mobile network if this setting is required
GPRS Password	Mobile Network Password, optional setting – check with your mobile network if this setting is required
CPIN	SIM PIN, optional password lock to restrict use of the SIM card

The next steps in the wizard guide you through entering VRS settings provided by your Trimble CenterPoint™ or Network RTK provider. The required settings are as follows:

Internet base settings	Description
Server Name/Address	RTK/VRS/CORS base station broadcast name
Server Port Number	Server Port Number
Mount Point	Base station mount point
VRS User Name	Network Assigned username
VRS Password	Network Assigned password

Once the wizard is completed, a screen shows the VRS connection status and details all the settings entered. The VRS status message types are as follows:



VRS connection status	Description
Logged in	VRS connected
Connecting	Mobile network - Searching
Disconnected	Mobile network - No service

Connected Farm Setup

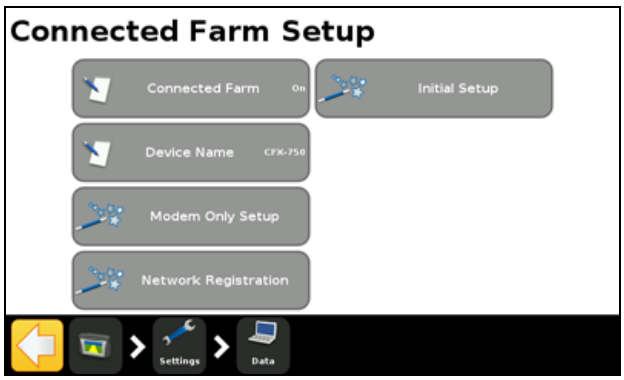
When you enable the Connected Farm feature, this allows the CFX-750 display to use the Connected Farm server to automatically and wirelessly send field information to your home computer.

Initial setup

The Initial Setup wizard takes you through the process of setting up your wireless modem and registering the network.

By default, the Connected Farm feature is set to *Off*. To turn the feature on:

1. Tap **Connected Farm Setup** and then **Connected Farm**.
2. Select *On*. The *Connected Farm Setup* screen appears:



Note – *When you turn the Connected Farm option On, tapping Connected Farm Setup takes you directly to the Connected Farm Setup screen.*

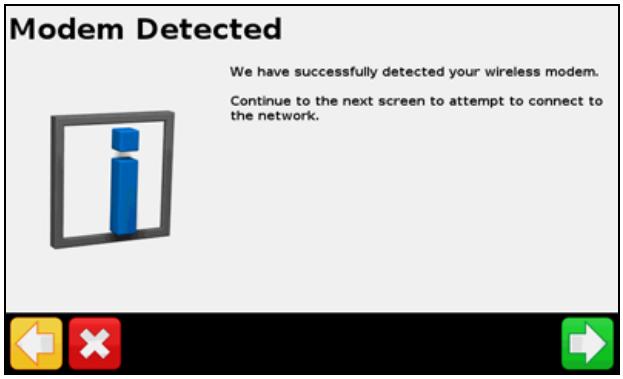
The following sections describe the menu options available from the *Connected Farm Setup* screen.

Device name

Use the on-screen keypad to give your device a name that you will recognize once you transfer the data to your personal computer.

Modem only setup

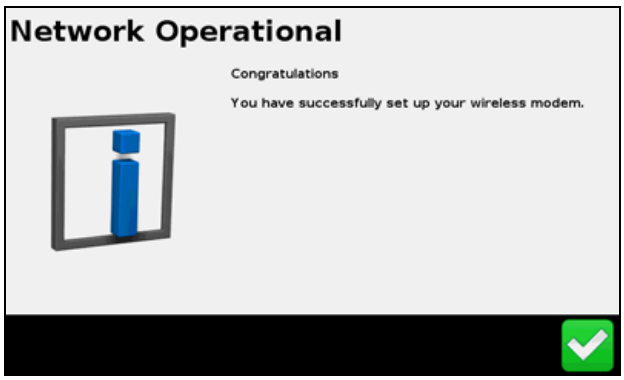
Use this option to set up your wireless modem. Once you have connected your modem, the following screen appears:


Modem Detected
We have successfully detected your wireless modem.
Continue to the next screen to attempt to connect to the network.

In the Wireless Modem Setup screen, you can adjust the following:

- APN/Setup String
- SIM PIN
- Network username: change the username used for network registration.
- Network password: change the password used for network registration.

  After you set up your modem, the following screen appears:



Once you receive this message, you can continue with the registration process.

Note – *The internal settings for your modem are on the SIM card that your modem uses. For further setup information, contact your SIM card provider.*

Network registration

Register your information with the Connected Farm Network. Use the username and password you created when you purchased Connected Farm. For more information contact your Trimble reseller.

Connected Farm data transfer

Note – *The Connected Farm service requires a subscription. For more information on purchasing a subscription, contact a Trimble reseller.*

To configure Connected Farm operations:

1. Tap and then select *Data / Connected Farm Setup*.
2. To enable the feature, select the option to turn on the Connected Farm service.

The setup menu now includes a number of settings, as shown below. If you are a first-time user of the Connected Farm service, select Initial Setup to open a setup wizard:

Connected Farm setup option	Description
Conected Farm	Turns Connected Farm functionality on/off
Device Name	User defined name to identify the display in Farm Works software
Check Server	Controls how often to check for new jobs or data
Modem Only Setup	Checks for a connected modem
Network Registration	Connected Farm registration
Initial Setup	First time Connected Farm setup wizard This requires a DCM-300 modem to be connected and in an area with good wireless service. Once the initial setup is complete, you can change individual settings as required.

Sending Field data using Connected Farm

Connected Farm field data includes event coverage, field boundaries, guidance lines, area features, line features, and point features: You can wirelessly transfer all this data from the CFX-750 display to the office.

With Connected Farm enabled, field event data is automatically sent to the Connected Farm service when you close the event.

To manually send field events:

1. Tap and then select *Data / Manage Data / Connected Farm /Send Data*.

2. Use the Client, Farm, Field, and Event options to select an individual field or all events, farms, or fields for a client.

Receiving Field data through the Connected Farm service

With the Connected Farm service, you can wirelessly transfer field information from the office to the CFX-750 display. Field data includes field boundaries, guidance lines, prescriptions, area features, line features, and point features.

To receive data from the Connected Farm service:

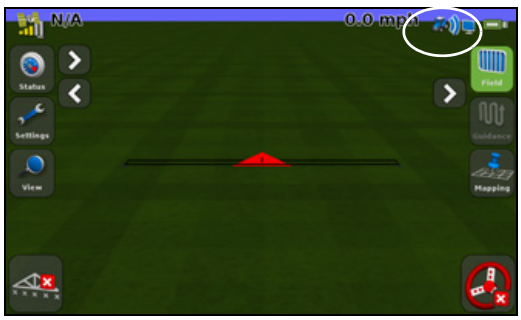
1. Select the Wrench icon and then select *Data / Manage Data / Connected Farm / Retrieve Data*.
2. From the *Retrieve Data* screen, tap **Check Server** to check for and download new field data from the Connected Farm server.

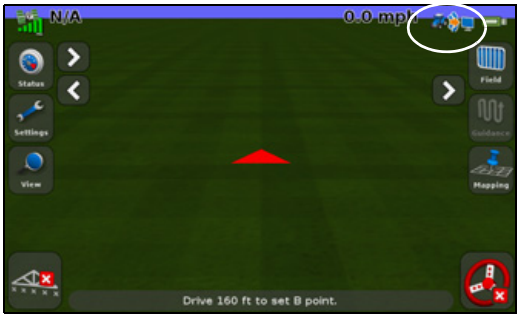
3. Once the data is downloaded, select the *Get Fields from Connected Farm* option to import the data into the display. As new data is received, use the *Get Fields from Connected Farm* function to import the most recent data into the display.

The Connected Farm service adds a status icon to the Run screen that shows the status of Connected Farm operation.

An icon at the top right of the screen shows if field data is being sent or received.

When data is being sent or received, an orange arrow blinks between the tractor and office computer.





Manage Data

The *Manage Data* screen enables you to handle your data through the USB drive or the display's internal memory.

USB

The *USB* screen enables you to:

- Retrieve the field data and CFX-750 configuration files from a USB drive and transfer it to the internal memory. The field data includes:
  - Field Boundaries
  - Point, Line and Area features
  - Guidance lines
  - Event data (coverage)

  - Prescriptions
- Send the following data from the internal memory to the USB drive:
  - Autopilot information
  - Prescriptions
  - Client, farm and field data

Retrieving data from the USB drive

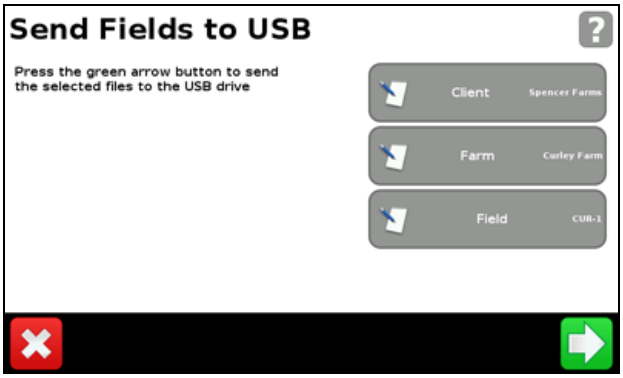
To transfer data from the USB drive to the internal memory:

1. In the *Manage Data* screen, tap USB.
2. Tap *Retrieve Data* and then choose the data that you would like to retrieve.

Sending data to the USB drive

To transfer data from the internal memory to the USB drive:

1. In the *Manage Data* screen, tap USB.
2. Tap *Send Data to USB* and then choose the data that you would like to send:



Note – *You cannot send data to a USB drive that is over 90% full.*

For more information, see The USB socket, page 30.

Clearing the internal memory

Over time the CFX-750 display's internal memory may become full. To avoid this, delete files that you no longer require:

1. In the *Manage Data* screen, tap *Internal* and then *Delete Data*.
2. Select the information that you want to delete and then follow the wizard until the files are deleted.

Note – *If a field is currently open it will close prior to the deletion.*

CHAPTER

9

System

In this chapter:

- Introduction
- Display
- Advanced
- EZ-Remote joystick
- Unlock / Upgrade
- Status
- CFX-750 screen
- Recalibrate touchscreen

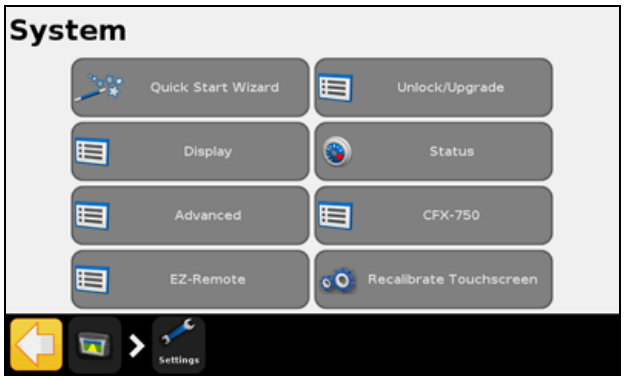
This chapter describes how to configure the system settings.

Introduction

The *System* menu enables you to adjust a variety of the CFX-750 display settings.

To access the *System* menu:

1. From the guidance screen, tap .
2. From the *Settings* screen, tap . The following screen appears:



The following sections describe the various items that are available in the *System* menu.

Display

Use the items in the *Display* screen to adjust the appearance of your CFX-750 display.

Units

You can display distances, speeds and areas in either US/Imperial or Metric format. By default, the display uses the US/Imperial format.

The available units for each format are outlined below:

Unit	US / Imperial	Metric
Distance	inches	centimeters
	feet	meters
	miles	kilometers
Speed	miles per hour	kilometers per hour
Area	acres	hectares

Color Scheme

You can adjust your color scheme according to the cab lighting and time of day. For more information, see Backlight, page 142.

This color scheme ...	Is suitable for ...
Day ***Note –*** *This is the default color scheme.*	A brightly lit environment.
Dimmed	Dark and low cab light environments
Red	Dark and low cab light environments

Time Zone

The GPS receiver provides UTC (formerly GMT) time. To display and log times in your local time, set the time zone offset.

Location	Standard Time Offset	Daylight Savings Time Offset
US Eastern Time	-5:00	-4:00
US Central	-6:00	-5:00
US Mountain	-7:00	-6:00
US Pacific	-8:00	-7:00
Australia East	+10:00	-11:00 (excludes QLD)
Australia Central	+9:30	+10:30 (excludes NT)
Australia West	+8:00	+8:00

View

There are three options for the map views:

View	Description
Auto Headland	The view automatically swaps between overhead view (in headlands) and trailing view (on swaths).
Auto Engage	The view automatically swaps between overhead view (not engaged) and trailing view (engaged).
Manual	You must manually change between overhead and trailing view.

Status Popup Transparency

Use this option to control the transparency level of the status popup tab:

At this level of transparency ...	The tab is ...
10	completely solid
1	barely visible

Backlight

You can adjust the brightness of the screen backlight to maximize visibility and reduce glare in different light conditions. For more information, see Color Scheme, page 141.

Touchscreen speaker volume

You can adjust the volume of the speaker according to your preference. Choose from *Loud*, *Quiet* or *Off*.

Lightbar Setup

You can adjust the lightbar settings as follows:

Use this setting ...	To ...
Look Ahead	Allow time for large vehicles to correct offline error: • For large vehicles that take longer to turn, increase the look ahead time. • For 4WD articulated tractors, always set the look ahead time to 0 seconds. Look ahead time applies to LED guidance only and does not affect EZ-Steer performance. Set the look ahead time in seconds.
LED Spacing ***Note –*** *The LED spacing is the distance represented by one LED.*	Adjust the sensitivity of the LEDs. To: ***increase*** sensitivity, decrease the LED spacing ***decrease*** sensitivity, increase the LED spacing
LED Brightness	Adjust the LED brightness for maximum visibility.
Main Lightbar LED Mode	Select the required LED mode. There are two modes to choose from: • ***Chase***: Chase the lights to stay online. The lights represent the swath location relative to the vehicle. • ***Pull***: Center the lights to stay online. The lights represent the vehicle location relative to the swath.

Advanced

Use the items in the *Advanced* screen to view and adjust advanced system features.

Save/Load Configurations

Once you have set up your lightbar for your current job, you can save the settings to a configuration file. Saving a system configuration can be useful for:

- Quick setup when moving the display between vehicles.
- Quick setup when using the same vehicle but changing the implement or application.
- Tuning the settings for improved performance. Save your improved settings.
- Restoring known good settings if unwanted adjustments have been made.

Digital Output

The CFX-750 display can generate a digital signal on pin 2 of Port A.

Note – *Additional equipment may be required to properly use the Digital Output function. To use speed pulse output, you need a radar sensor cable kit that includes a pulse amplifier adapter. Contact your local reseller.*

Use this setting...	To...
Disabled	Disable digital output on pin 2 of Port A.
Radar	Output simulated radar pulses at a pre-defined speed pulse output rate. This can be useful to: • Replace the radar/true ground speed sensor for speed on the vehicle • Send speed to any other agricultural device requiring speed pulses, such as a yield monitor or variable rate controller. ***Note –*** *After you select Radar, set the radar frequency rate from the Digital Output screen.*
Remote Output	Output a signal whenever auto steering is engaged. This can be useful to drive a switch or relay for equipment that should be active when engaged.

Enable Advanced User Config

CAUTION – Do not use the *Enable Advanced User Config* feature unless you have the support of a Trimble Reseller. Altering any of the settings for this feature may cause system failure.

NMEA Output

NMEA (National Marine Electronics Association) messages are a standard format that GPS devices use to communicate. The CFX-750 display can output NMEA messages to communicate with other NMEA-compatible devices.

In the NMEA Port Parameters screen, specify the following:

Use this setting ...	To ...
NMEA output port	Specify the port that the NMEA device is connected to
Baud Rate	Set the transmit/receive rate of the serial port in bits per second (bps)
Data Parity	Select how the parity bit is added to the data transfer

Note – *For the CFX-750 display to communicate with another device, the Port Parameters on the display must match those of the device.*

In the *Message Selection* screen, select from the list of available NMEA messages:

Message	Description
GGA	Position and fix related data
VTG	Speed and heading
GSA	Position fix mode, satellites used, and the dilution of precision (DOPs)
GLL	Position and status
RMC	Status, position, speed over ground (SOG), date, and magnetic variation of the position
ZDA	Date and time
GSV	Satellite information

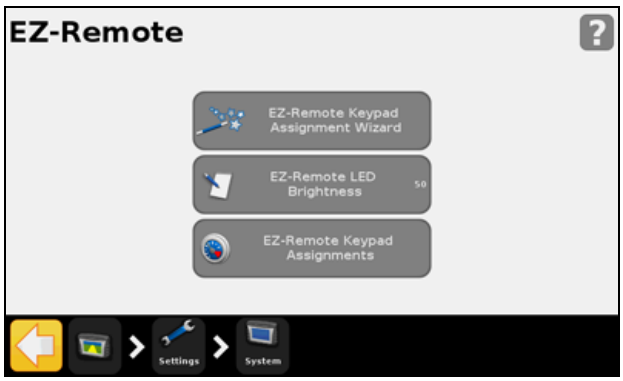
EZ-Remote joystick

The EZ-Remote option will only appear in the *System* menu if you have an EZ-Remote joystick installed. For more information, see the *EZ-Remote Joystick Quick Reference Card*.

Use the *EZ-Remote* screen to:

- assign functions to buttons 1-4 on the EZ-Remote joystick
- adjust the LED brightness of the buttons

- review your button assignments.



EZ-Remote Keypad Assignment Wizard

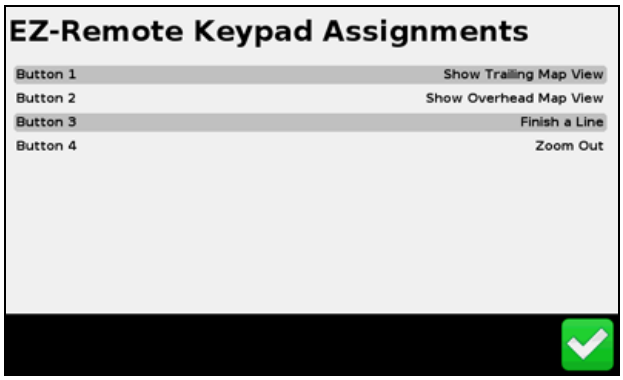
1. On the CFX-750 display, tap the first EZ-Remote joystick button that you would like to program.
2. In the *Choose a Function* screen, tap the function you would like to assign to the joystick button. See Using the EZ-Remote joystick, page 42.
3. In the *Finished* screen, select either:
   - **Choose another button** to repeat Step 1 and Step 2.
   - **Complete this wizard** to exit the wizard.

EZ-Remote LED Brightness

Use this screen to adjust the brightness of the LED buttons on the joystick. Enter a number between 0-100.

EZ-Remote Keypad Assignments

The *EZ-Remote Keypad Assignments* screen shows the functions that have been assigned to the four programmable buttons,



EZ-Remote operation

When the Run screen is active on the CFX-750 display, use the buttons on the EZ-Remote joystick to perform the functions you have assigned.

Note: The Up, Down, and Trigger buttons are not supported.

Use this button ...	To ...
Engage	Engage auto steering
Up / Down	N/A
Right	Nudge the guidance line to the ***right***, in the guidance screen.
Left	Nudge the guidance line to the ***left***, in the guidance screen.
Trigger	N/A
1-4	Activate the function that you have assigned. To learn how to assign a function to the programmable button, see the EZ-Remote joystick, page 144.

Unlock / Upgrade

Use the *Unlock/Upgrade* screen to:

- Upgrade your CFX-750 display to a newer firmware version.
- Unlock features such as Field-IQ crop input control system.

Upgrading your display

1. Transfer the new firmware file from www.trimble.com to your office computer.
2. Connect the CFX-750 display USB memory stick to your office computer.
3. Unzip the firmware file and then save it to the root folder of the USB memory stick.
4. Insert the USB memory stick into the USB socket of the display.
5. In the Unlock/Upgrade screen, tap **Firmware Upgrade Wizard**.
6. Select the file that you want to upload, and then tap . The firmware begins to load.

   Once the new firmware has successfully loaded, the display automatically restarts. ***Do not*** disconnect the power from the display while it is rebooting.

Unlocking features

Note – *To unlock features, you must have an unlock code. To obtain an unlock code, contact your Trimble reseller.*

1. In the Unlock/Upgrade screen, tap **Password Upgrade**.
2. Enter the unlock password. Note that passwords are case sensitive.

   Once the password is successfully entered, the display automatically restarts. ***Do not*** disconnect the power from the display while it is rebooting.

Status

Use the *Status* screen to view the current status of the system. The items that appear in the *Status* screen vary according to the features that you use.

Select this item ...	To view ..
Region protect	The GPS signal region you are currently in and whether it is locked or unlocked. If your region is locked, contact your Trimble reseller.
Language Pack status	The language packs that have been installed on the display.
LB25 remote lightbar status	The following information for the lightbar: • Status: *Connected* or *Disconnected* • Serial number • Firmware version

Select this item ...	To view ..
EZ-Remote status	The following information for the EZ-Remote: • Status: *Connected* or *Disconnected* • Serial number • Firmware version
System status	The current time and date ID: CFX-750 The following data about your CFX-750 display: •Version and Version date •Serial number •Part number •Harware Revision System voltage Temperature Storage: This is the number of hours of coverage logging remaining before the internal memory is full. Operational hours: This is the number of hours that the CFX has been operating.
Upgrade options	The status of optional features and extensions
Fault history	Those faults that have occurred recently (they may not be currently active).

CFX-750 screen

The *CFX-750* screen displays two options:

- About the Display
  This screen displays information about your CFX-750 display, including the current version and the serial number.
- Restore Defaults
  Restore the display defaults to clear all of your current settings. Note that if you choose to restore the default settings, your display and lightbar will restart.

Recalibrate touchscreen

The first time you power on the display, you must calibrate the touchscreen. See Power up, page 28.

If the current calibration does not read your selections accurately, use the *Recalibrate Touchscreen* option to adjust the responsiveness of the touchscreen.

Alternatively, do the following:

1. Power off the display and then power it on.
2. Wait until the status bar at the bottom of the second startup screen is more than half full:

3. Press ***both*** brightness control buttons at the same time:

4. Hold the two buttons down until the display beeps.